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Family-Centred Maternity and Newborn Care: National Guidelines

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Preface

The *Family-Centred Maternity and Newborn Care: National Guidelines* were developed through a collaborative process involving 70 professionals and consumers across Canada, and facilitated by Health Canada and the Canadian Institute of Child Health. Since so many stakeholders are involved in the care of mothers and babies in Canada, the process of developing these guidelines needed to be participatory and inclusive to increase the likelihood that they would be used and have an impact. Therefore, these Guidelines are the result of a three-phase process — starting with a survey of users; proceeding with consultation with national professional and consumer organizations; and concluding with the writing and review being accomplished by individuals representing the various disciplines involved in maternal and newborn care, families and all regions of the country.

To plan the process for developing the guidelines, a Core Group of national professional and consumer organizations was established. It identified recent information that was relevant to the development of the guidelines; planned the process for writing; made recommendations regarding their structure; identified participants for working groups to write them; and planned for the roles of their participant organizations in dissemination and implementation.

Thirteen Working Groups, organized around the content of the guidelines, were established to write the content. The Working Groups members were interdisciplinary volunteers; each group was headed by the project director. The disciplines were medicine (neonatology, obstetrics/perinatology, anaesthesia, and family medicine); nursing (community and hospital); midwifery; families; childbirth education; administration; architecture and planning. The Core Group chose volunteers based on their expertise in particular subject areas. All regions of the country were represented. These volunteers communicated via conference calls to establish the outline for their chapter, discuss the specific content and review drafts. They continued their work through e-mail, fax, and mail communication. The volunteers each wrote specific areas of the content and the project director drew the content together and edited/revised the chapters. Each of the chapters went through three or four drafts during this process.

The specific chapters and/or the entire document were reviewed by other volunteer reviewers. In addition, the entire document was reviewed, revised, and finalized by a formal Editorial Review Team. This team of 15 individuals was interdisciplinary in composition, including consumers. It represented each of the Working Groups, had representatives who had not previously been part of the process, and represented all regions of the country. Each member had expertise in the related content. The Editorial Review Team reviewed and provided feedback on three further drafts of the guidelines. Its members identified, discussed and resolved contentious issues. The team worked exclusively via teleconferences — each chapter requiring at least three calls — and the project director was responsible for revising and editing the drafts according to the team's recommendations.

The result of this tremendous volunteer effort is the newly revised *Family-Centred Maternity and Newborn Care: National Guidelines* — 2000, Millennium Edition.

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Health Canada specifically would like to thank the Canadian Institute of Child Health, with a special mention to Louise Hanvey, project director, for her input, advice and guidance during the development of this valuable document. Without her expertise, dedication and professionalism, this project would not have been managed in such a cohesive fashion. As well, we wish to mention the writing skills of Wendy Dayton, editing and indexing expertise and constant involvement of Judith Whitehead, the tireless efforts of Rolande Ostiguy, Manager, Publications Projects, Health Canada, as well as the quality of the design and page makeup by Stephanie Pelot, Pentafolio Inc.

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Association of Women's Health, Obstetric and Neonatal Nurses – Canada
Canadian Anaesthetists' Society
Canadian Coalition for the Prevention of Developmental Disabilities
Canadian Coalition for Regionalized Perinatal Care
Canadian Confederation of Midwives
Canadian Council on Health Services Accreditation
Canadian Healthcare Association
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Canadian Medical Association
Canadian Nurses Association
Canadian Paediatric Society
Canadian Public Health Association
Canadian Women's Health Network
College of Family Physicians of Canada

International Childbirth Education Association (ICEA)
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Family-Centred Maternity and Newborn Care:
National Guidelines

— CHAPTER 1 —

Introduction and Philosophy

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Introduction

Guidelines: History and Context

The guidelines for maternal and newborn services, first published in Canada in 1968, were subsequently revised in 1974 and again in 1987. This, therefore, is the fourth edition of these guidelines. Each edition has evolved in response to the changes in Canadian society that have influenced maternal and newborn care in Canada. Over the past 30 years, a number of fundamental changes have influenced the provision of maternal and newborn care in Canada. The current guidelines should thus be considered against the backdrop sketched below.

TECHNOLOGY

It is no secret that an explosion in technology has occurred. New and more sophisticated technological tools have become available for maternal and newborn care; for example, electronic fetal surveillance and invasive pain-relief measures. Clearly, information technology has changed the way communication takes place throughout the health care system.

CONSUMER AND PROFESSIONAL PARTICIPATION

Today, a consumer and professional movement is in place, predicated on the belief that birth is a natural, family event which suffers if an "illness model" is applied to the care of families during the childbearing cycle. Many have questioned the routine application of technology, as well as many other routine practices, in maternal and newborn care. They have insisted that women and families be full participants in decisions regarding their care. This is the group that coined the term "family-centred care."

HEALTH CARE RESTRUCTURING

A restructuring of the health care system is still under way today, with consequent fiscal constraints. Although this restructuring has varied by region across Canada, some similarities have surfaced. For example, a move has occurred to decentralize services from the provincial level to municipalities, with regionalization emerging in some areas. Institutions are downsizing or closing, and transferring services. Hospital stays are becoming shorter. One stated goal is the integration and the bringing together of community and institutions, in one seamless system.

EVIDENCE-BASED PRACTICE

Increasingly, health care practices are being questioned and evidence-based practices demanded. In effect, maternal and newborn care has played a central role in the development of this evidence-based practice. The *Oxford Database of Perinatal Trials* (now the *Cochrane Collaboration Pregnancy and Childbirth Database*) was the first comprehensive resource to provide systematic, evidence-based reviews concerning the efficacy of interventions. Clinical practice guidelines, based on the evidence, have now proliferated in the fields of medicine, nursing, and midwifery.

DIVERSITY OF THE CANADIAN POPULATION

The Canadian childbearing population has become even more diverse in terms of culture, ethnicity, race, socio-economic status, and age; also affected are the social supports and resource systems for families and communities. Today, more women of childbearing age are employed outside the home. More women are delaying childbearing until an older age. Yet, many families are isolated from the support of extended families. Programs and services must therefore be responsive and accessible to these diverse needs. It is important, too, that all services recognize the special characteristics of the community they are designed to serve. They should be attractive and accessible to women and their families, particularly those who may be least inclined, even reluctant, to use them. This diversity poses a challenge to all involved in maternal and newborn care.

Guidelines: The Purpose

These guidelines are intended to assist hospitals and other health care agencies in planning, implementing, and evaluating maternal and newborn programs and services. Although designed for policy makers, health care providers (e.g. physicians, nurses, midwives), parents, program planners, and administrators, these are not clinical practice guidelines. Current clinical practice guidelines, however, are referred to and abstracted throughout the document.

Because of the diversity of Canada's regions and communities, this document is intended to be sufficiently flexible to encompass the various approaches, policies, and protocols of Canadian institutions, agencies, communities, and regions.

Guidelines: The Content

These guidelines are organized to go from general principles to specific details. Chapter 1 begins with an *introduction* to the concepts of family-centred maternity and newborn care and a description of the basis of this care — the guiding principles. Chapter 2 describes the *organization of services* within a regionalized system of family-centred maternity and newborn care. The next four chapters provide guidelines for providing care during the childbearing cycle: *preconception care, care during pregnancy, care during labour and birth,* and *early postpartum care of the mother and infant and transition to the community*. The next three chapters address specific topics of concern relative to family-centred maternity and newborn care: *breast-feeding, loss and grief*, and *transport.* The final chapter describes the guidelines for the *facilities and equipment* necessary when providing care.

Each chapter begins with the particular guiding principles relevant to the aspect of maternity and newborn care under discussion. Each chapter also includes its own bibliography of references to the literature. The appendices at the end of most chapters provide more detailed information in specific areas.

These guidelines are based on research evidence. If the evidence is unclear or an area of care remains controversial, it is noted. If a clear benefit emerged based on strong research evidence, it is detailed. Where there are risks, they are defined. Finally, if the research is non-existent or limited, it is recommended that evidence be developed.

It is important to be aware of the limitations of evidence-based practice. Clearly, there is much research evidence that has still to be collected, particularly qualitative evidence relating to the psychosocial "experiential" aspects of childbearing. Moreover, major challenges remain in the actual bringing forth of evidence concerning the effectiveness of interventions for the care of women and families. For instance, the well-respected *A Guide to Effective Care in Pregnancy and Childbirth* (Enkin et al., 1995) lists more than 30 areas where there is still insufficient research data to permit conclusions to be drawn.

What Is Family-Centred Maternity and Newborn Care?

Family-centred maternity and newborn care is a complex, multidimensional, dynamic process of providing safe, skilled, and individualized care. It responds to the physical, emotional, and psychosocial needs of the woman and her family. In family-centred maternity and newborn care, pregnancy and birth are considered normal, healthy life events. As well, such care recognizes the significance of family support, participation, and choice. In effect, family-centred maternity and newborn care reflects an attitude rather than a protocol (Rush, 1997, p. 1).

The Guiding Principles of Family-Centred Maternity and Newborn Care

Family-centred maternity and newborn care is based on the following guiding principles:

Birth is a celebration — a normal, healthy process.

For most women, pregnancy will progress smoothly to the birth of a healthy, much-welcomed baby.[1] Supported by family and friends, birth can be a time of great happiness and fulfilment. Family-centred maternity and newborn care is based on respect for pregnancy as a state of health and for childbirth as a normal physiological process. It is a profound event in the life of both a woman and her family.

For some women and families, however, pregnancy may be unplanned or unwanted; complications or adverse social circumstances may occur. The birth itself may be complicated and the outcome unexpected. In these situations, in order to support the family's unique needs, family-centred care is even more critical.

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[1] These guidelines attempt to use the language of women whenever possible. Therefore, we refer to "a woman and her unborn baby," or "a woman and her baby," rather than "a woman and her fetus."

Pregnancy and birth are unique for each woman.

Women have diverse experiences and needs. Women and families hold different philosophies of birth, based on their specific knowledge, experience, culture, social and family background, and belief systems. Support and care should be respectful of such factors. Some women have negative, fearful feelings about birth and are reluctant to take charge of their own care. These feelings need to be acknowledged. The approach to caring for women and families should involve adapting care to meet their needs, rather than expecting women and families to adapt to institution or provider needs.

The central objective of care for women, babies, and families is to maximize the probability of a healthy woman giving birth to a healthy baby.

No one cares more about achieving a safe and happy outcome to a pregnancy than the pregnant woman and her family. Their goal is a positive and fulfilling pregnancy, childbirth, and early postpartum period. Health care providers share this aim. Clearly, it is important to recognize each woman as an individual; each needs clear and unbiased information as to the options available to her.

Family-centred maternity and newborn care is based on research evidence.

Wherever possible, these national guidelines are based on research evidence. As already stated, if the evidence is unclear, it is noted. If a clear benefit based on strong research evidence has emerged, details are provided. If there are risks, these are noted. If no or limited research is available, it is recommended that evidence be developed. Resources for assisting with the evaluation of available evidence, and for planning and implementing research projects, include the Cochrane Library; university departments of nursing, medicine, midwifery and others; regional perinatal centres; public health units; researchers; and consultants. Finally, one should be aware of the limitations of evidence-based practice. Much research evidence has still to be collected.

Relationships between women, their families, and health care providers are based on mutual respect and trust.

It is important for health care providers to respect and support a woman and her family. This will help her to give birth safely, with power and dignity. As well, it is crucial that a woman and her family respect and trust their health care providers. The provision of family-centred maternity and newborn care depends on such mutual respect and trust.

Women are cared for within the context of their families.

A woman's family is key when she is pregnant and giving birth. It is part of her system of care. It is up to the woman to define her family and supports; she chooses who is included or excluded. Her definition of family may include only one person, or many different people. These may be the baby's father, siblings, and grandparents; the woman's partner; the baby's aunts and uncles; the woman's friends; and so on. Family-centred care treats the family as a unit of care.

In order to make informed choices, women and their families need knowledge about their care.

Enabling a true choice among alternatives means providing information about the real options available, entering into an open dialogue that is respectful of all concerns and opinions, and providing flexible policies that accommodate planning and decision making. Sharing information is a mutual responsibility of health care providers, agencies, women, and families. The benefits and risks of all procedures need to be disclosed, as well as all the options that women and families might consider. It is not enough to expect women to bring their "choices" with them — health care providers need to provide time, support, and encouragement for exploration of the various options.

Women have autonomy in decision making. Through respect and informed choice, women are empowered to take responsibility.

Women are the primary decision makers about their care. Women and families make decisions based on many factors — the expertise of professionals being one. Health care providers can encourage and guide those women and families wishing to seek out resources for such decision making. When all relevant information has been made available to women and families for the achievement of their goals, they are guided, not directed, by the professionals they have chosen to share the responsibility for their care.

Health care providers have a powerful effect on women who are giving birth and their families.

How a woman feels about pregnancy and childbirth is determined by at least two powerful factors: previous life experiences and the emotional support received at those times. Studies of women's satisfaction with the childbirth experience and their perceptions of the personal effects of childbirth show that satisfaction is more highly associated with the emotional care received during labour than with the birth process itself. Women remember the events of birth and their attendant feelings throughout their lives (Simkin, 1996). They remember the specific words and actions of their health care providers. Satisfaction is linked to the type of care received and the feelings of personal control and accomplishment. Health care providers must be aware of their power to influence the long-term impact of the woman's childbirth experience.

Family-centred care welcomes a variety of health care providers.

Women choose from a variety of health care providers of care and support during the pregnancy, birth, and early parenting periods. Health care providers need to communicate with, respect, and trust one another; to work together for the woman, her baby, and her family. Health care providers include physicians, nurses, midwives, labour companions or doulas (a lay person who provides support during labour), childbirth educators, and various others who help with physical or social needs.

Technology is used appropriately in family-centred maternity and newborn care.

Technology is to be used judiciously and appropriately, and only if a benefit has been demonstrated. For example, it is important that technology not be used in place of direct supportive care and observation. As well, the issue of safety should not be viewed as a reason for *unnecessary* intervention and technological surveillance; it only detracts from the experience of the mother and family.

Quality of care includes a number of indicators.

When measuring quality of care, it is important to monitor not only indicators such as morbidity and mortality, but also women's experience of pregnancy, birth, and postpartum care. Measuring a woman's experience during childbirth and the postpartum period is a valuable quality-assurance activity. Health care providers can use various methods to obtain feedback about staff approaches, personal sense of control, comfort and attitude in the setting, learning, preparation, and so on. Input can be obtained from regular interviews, surveys or questionnaires, and comment cards or suggestion boxes.

Language is important.

The style of language and choice of words used in signs, printed material, and conversation often communicate as powerfully as the information conveyed. Because words can reflect attitudes of respect or disrespect, inclusion or exclusion, and judgment or acceptance, language choices can either ease or impede communication. Such words as "guidelines," "working together," and "welcome" convey openness and an appreciation for the position and importance of families. Such words as "policies," "allowed," and "not permitted" suggest that professionals are in authority over women and families. Referring to parents and other family members as "partners," "colleagues," "joint decision makers," or "experts" acknowledges that families bring important information and insight to pregnancy and childbirth, and that families and professionals together form a team.

Implementing the Guidelines: Facilitating Change

The culture, attitudes, and norms of organizations — both agencies and institutions — influence the care approaches and practices offered to women and their families. To provide family-centred maternity and newborn care, organizations need to continue to develop and refine a caring culture. Examining and designing their own culture and values is key to making changes. This includes understanding how they, as organizations, fit into the spectrum of a caring culture and how that culture can be improved.

Family-centred maternity and newborn care may require a shift in thinking and practice. In turn, a number of changes may be required. These might include the following:

From	To
a disease and deficit focus	one that identifies and builds on individual and family strengths;
reliance on professional and institutional expertise	partnerships and collaboration with women and families;
practices that foster dependency	those that empower women, families, and community;
a reliance on technology	an awareness of the skills and expertise of the women, families, and professionals; and reserving technology for specific defendable indications;
building isolated centres or programs	rediscovering the importance of community involvement and community partnerships.

Adapted from: Institute for Family-Centered Care, *Advances in family-centered care*, 1995, p. 2.

A family-centred framework can shape institutions and services, in terms not only of organization, but also in how people relate to each other as they work together. Organizations that have already moved toward an increasingly family-centred approach in care and services use the following strategies for success.

They:

- show respect for women and families by asking about their experience, plans, and needs;
- assess existing services and resources and are willing to address families' wishes as a complement to policies and programs;
- clearly identify core values, using a broad-based collaborative process to identify and foster family-centred values;
- recognize that leadership is critical. While individuals within an organization may strive to provide the best in family-centred maternity and newborn care, the degree to which such care is genuinely provided depends upon the priorities and commitment of the governing board, the administration, and the leaders of the medical, nursing, and midwifery sectors. A supportive environment is needed to facilitate change;
- effect change in the decision-making process at the administrative policy level. This means involving women and families at the ground level of decision making — that is, when planning programs, services, and institutions and creating policies; and
- recognize that family-centred change requires persistence, patience, creativity, and vision.

Adapted from: Institute for Family-Centered Care, *Advances in family-centered care*, 1995, p. 3.

Specific Steps for Successful Change

The process of change incorporates specific steps, as outlined in Table 1.1.

Table 1.1 Steps to Successful Change

1. Identify a core group to facilitate change.
2. Involve women and families in all phases of the change process.
3. Create opportunities to develop a shared understanding of family-centred care. For example, offer shared learning opportunities for caregivers — both family members and professionals across disciplines, departments, and agencies.
4. Encourage people to express their differing points of view.
5. Plan initial changes that can succeed. Don't tackle the most complex or difficult task first. Start small.
6. Have key staff demonstrate new ways of thinking and working. Let them teach by example.
7. Provide education, training, and support for staff and families to work in new ways.
8. Build in ways to measure change and evaluate outcomes.

Adapted from: Johnson et al., *Caring for children and families: guidelines for hospitals,* Association for the Care of Children's Health, 1992.

Support, Education, and Training

The support, education, and training of caregivers is crucial to successfully implementing family-centred maternity and newborn care. The critical issues are attitudes and skills.

Notwithstanding their various care skills, the attitudes of caregivers must correspond with the tenets of family-centred maternity and newborn care. The practice of family-centred care calls for subtle yet substantive changes in professional practice: a shift from the traditional "expert" model of service to a more collaborative one; and one that incorporates ongoing education directed toward values, attitudes, and practice (Cannon and Ploof, 1991). As well, attitudinal explorations by staff members may be necessary, involving the concepts outlined in Table 1.2.

Table 1.2 Concepts for Exploring Attitudes

- The willingness and strength to let go of control (except in situations of clear health risk)
- An empathetic and respectful approach to women and families
- A belief that women and families bring a unique expertise to the caregiver-client relationship
- A belief that the perspectives and opinions of women and families are as important as those of professionals
- The presumption that strengths are present in all women, families, and communities, and the willingness to look for these strengths
- A respect for the primary role of women and families in making decisions at all levels of care
- The desire and effort to improve interpersonal skills

How Can Women and Families Participate Effectively?

Women and families can serve as advisors to program planners and services providers in many different ways. Some are formal and ongoing, others are time limited. All are necessary to ensure that the services truly meet family needs. Table 1.3 presents various ways of enabling women and families to participate effectively.

Table 1.3 Enabling Effective Family Participation

- Hold focus groups for women and families as specific issues arise.
- Hold a monthly family/staff coffee hour.
- Solicit family input for community and program needs assessments.
- Include women and families on the maternal newborn committee or on other committees or boards.
- Include families in on-site visit teams to other programs.
- Hold brainstorming sessions with families before developing educational materials.
- Have families review drafts of all written materials.
- Include a family panel during orientation for new staff.
- Develop a woman and family satisfaction survey.
- Keep a suggestion book handy, so families can record their ideas.
- Invite families to present at in-service programs for staff.

Jeppson ES, Thomas J, *Essential allies: families as advisors*. Institute for Family-Centered Care, 1999.

Involving women and parents effectively on committees and boards often requires a shift in former ways of organizing. Some helpful hints are listed in Table 1.4.

Table 1.4 Involving Families Effectively on Committees

- Develop a plan for identifying which women and families will participate.
- Help support staff to understand the value of family participation.
- Provide time to introduce both family members and staff to the issues, participants, and process.
- Provide convenient meeting times and locations for family members.
- Compensate families for their time, expertise, and expenses.
- Provide accurate, timely, clear, jargon-free, and appropriate information prior to meetings.
- Balance membership on committees between families and professionals. One family member on a committee is not enough.
- Consider shared leadership; for instance, parent and professional co-chairs.
- Recognize that some family members may require more support than others to participate in a meaningful way.

Jeppson ES, Thomas J, *Essential allies: families as advisors*. Institute for Family-Centered Care, 1999.

Encouraging the participation of all community partners on committees requires careful planning. Helpful strategies are outlined in Table 1.5.

Table 1.5 Strategies for Encouraging Community Participation

- Bring together focus groups or panels to provide input about selected program areas/issues.
- Clarify membership of committees so that community/parent representatives are formally listed.
- Advertise in local newspapers, agency newsletters, and departmental posters for community representatives. Attributes to include:
  - willingness to attend meetings
  - ability to bring a consumer perspective
  - ability to function as a member for one year (specify tenure)
  - experience of having used the program within the past year.
- Assure that the community representatives' role is clear to all.
- Have a committee member pair with the parent representative for purposes of support, introduction, involvement, orientation, briefing, and debriefing.
- Consider reimbursement or provision for travel, parking, and child care.
- Consider other community "consumers": educators of the program's students; selected agencies frequently used (e.g. child protection agencies, women's shelters, maternity homes, public health units); selected groups (e.g. prenatal education, doula, parent support groups, perinatal follow-up clinics); and media/promotion representatives.

In Conclusion

Increased participation of women and their families in decisions concerning their pregnancy, birth, and early postpartum experiences promotes greater self-confidence in caring for children. Building the foundation for nurturing parent-child relationships begins before pregnancy, continues through the prenatal period, and can extend through the participation of both parents in the birth and care of their infant. Confident and competent parents are a powerful influence in society. Their contribution is critical to the healthy growth and development of their children.

Family-centred care recognizes pregnancy and birth as a time of emotional, social, and physical change, but not as a time of illness. On the one hand, health care providers make their expertise available to parents; on the other, providers and parents work together as a team.

The care described in these guidelines is based on the philosophy of family-centred maternity and newborn care. This chapter provides an overview of the guiding principles of family-centred care. The remainder of the book will help health care providers and parents put these principles into practice.

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— CHAPTER 2 —

Organization of Services

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Introduction

The *guiding principles* for family-centred care constitute the basis for the national, provincial, regional, or local organizing of services for the care of mothers and babies. Hence, pregnancy and birth are considered normal, healthy, and unique for each woman. The central objective of care for women, babies, and families is to assist women to give birth to healthy babies. This means that women should be cared for within the context of their families. As well, women and their families need to have full knowledge about the care and circumstances surrounding birth so they can make informed choices. Today, it is recognized that women have autonomy in decision making and, through respect and informed choice, are empowered to take responsibility. Mutual respect and trust must underlie the relationships between the variety of caregivers found in maternal and newborn services and women and their families. Finally, technology must be used appropriately in family-centred care.

Maternal and newborn services should be organized with:
- participation of all the stakeholders in the planning and provision of care; that is, the parents, community groups, community agencies, health care providers, health units, provider offices, and hospitals;
- consideration for the pregnant woman's health status (prior to and during pregnancy), and referral to the appropriate resources for care;
- provision of available and accessible care, with due consideration given to the geographic, demographic, and cultural conditions of the families;
- integration of appropriate institutional and community-based programs for the care of mothers, newborns, and families;
- collaboration among all participants, parents, and caregivers with regard to consultation, transport, and referral;
- provision of education for women, families, and health care professionals;
- coordination of services and supports within a community to ensure continuity of care;
- assessment of outcomes; and
- efficient and ethical use of personnel, facilities, and resources.

Regionalization of Services

Description of Regionalization

Regionalization of maternal and newborn care brings together a comprehensive organization of services to provide optimal care for women, babies, and families. Central to the concept of regionalization is risk assessment, combined with referral to risk-appropriate services. The system of care is broadly focused on meeting the needs for appropriate services, professional education, research, and evaluation (March of Dimes Birth Defects Foundation, 1993).

It is recommended that the regionalization of maternal and newborn services should have as an overall, planned outcome:

> *that all women and their families have access to appropriate care that is responsive to their needs, and as close to home as possible* (Iglesias et al., 1998).

Regionalization of maternal and newborn care implies the development of a coordinated, cooperative system of care within a defined geographic area. The goals of such care are:

- provision of quality care for all women, newborns, and their families;
- appropriate use of personnel and facilities;
- coordination of services;
- provision of referral mechanisms;
- provision of professional education; and
- incorporation of research and evaluation.

Also central to a regionalized system of care are the mutual relationships and responsibilities of the agencies providing care. The goal here is to provide appropriate care as close to home as possible for mothers, babies, and families.

Maternal and newborn care is composed of five distinct phases: preconception, prenatal, labour and birth, postpartum, and the newborn period. In any one phase, while the vast majority of mothers and babies are healthy and do not experience difficulties, some may experience problems. These problems may be either simple, requiring minimal expense; or uncommon and complex, requiring costly resources. It is therefore necessary to develop coordinated maternal and newborn systems in communities and regions, thereby ensuring accessibility to comprehensive and continuous care, as required. This chapter describes guidelines for maternal and newborn care within such a regionalized system.

The success of regionalization requires the cooperation and collaboration of a large number of agencies and professionals. Over the past two decades, progress toward regionalizing maternal and newborn care has varied across Canada. Success has resulted directly from the relationships and communication between hospitals at all levels. As well, significant contributions have been made by, among others, health units, community organizations, home care programs, and parent groups. Inclusion of community partners has varied remarkably from region to region.

The Regional Maternal and Newborn Program

Regional maternal and newborn health care exists within a *national and provincial/territorial system.* The regional system is defined by the geography, environment, and culture of the region, as well as by its political, financial, and legal circumstances.

The regional maternal and newborn health care system is an open system of differing types and intensities of services, ranging from community-based care to acute hospital-based tertiary care. A variety of health professionals, support workers, and parent groups provide services for the perinatal health care system.

Models of Regional Maternal and Newborn Programs

While variations do occur, certain elements are essential when establishing a regional system of maternal and newborn care. These elements can be characterized as follows.

DEFINITIONS OF REGIONS

A region is an area whose geographic boundaries define a catchment area for coordination and organization of care. Ideally, a region includes all necessary maternal and newborn services; that is, primary, secondary, and tertiary levels; or Levels I, II, and III. Given the differences in geography and population density, and in distribution of providers and their services, regions can vary in size and capacity. Moreover, regions defined for maternal and newborn care may include several "regions" organized for other administrative purposes. Certainly, duplication and fragmentation are best avoided when the boundaries for maternal and newborn care are clear.

PLANNING AND COORDINATION AT THE PROVINCIAL/TERRITORIAL LEVEL

Since health and social services are funded provincially/territorially, it is important to have, in each, a planning and coordination mechanism whereby maternal and newborn services are developed and coordinated from a province- or territory-wide perspective. This mechanism ensures accountability and maximizes efficient deployment of health care finances. In effect, the coordinating and planning mechanism takes many forms to ensure input from each region.

Each province or territory may designate different agencies or groups to sponsor such activities. These include the colleges of physicians, nurses or midwives, the provincial/territorial medical associations, and the reproductive care programs. The last grouping is likely to be the most effective, for reproductive care programs are usually multidisciplinary, have a broad scope of responsibility, and provide opportunities for participation of parents. They must have links with, and a mandate from, the provincial/territorial Ministry of Health. The development of a database and an information system designed to permit an annual activities report, thereby assisting with the evaluation of effectiveness and future planning, is an essential system component, requiring a collective effort.

REGIONAL MATERNAL AND NEWBORN ADVISORY GROUP

A regional program should have a community-based, multidisciplinary advisory group, whose role it is to provide leadership for successful care and programs. Parents must be involved in this group in a meaningful way. Group members would include maternal and newborn health care providers, parents, hospital representatives, community or public health representatives, and representatives from local support groups. (Table 2.1 suggests potential members.) It is essential that this group have a mandate from the Ministry of Health to help establish roles, responsibilities, communication procedures, and planning mechanisms. National and provincial/territorial guidelines can then be used to develop policies and procedures for the region, with due consideration as to their best implementation.

Table 2.1 Regional Maternal and Newborn Advisory Group Members

- Parents
- Family physician
- Midwife
- Pediatrician
- Obstetrician
- Prenatal educator
- Hospital maternal and newborn nurse(s)
- Health unit/Community health parent-child nurse(s)
- Breastfeeding support group
- Lactation consultant
- Labour support/Doula group
- Infant development worker
- Community health promotion and parenting groups

THE REGION'S CONTINUUM OF MATERNAL AND NEWBORN CARE

The continuum of care is provided by a variety of personnel who provide care for women and newborns during the preconception, pregnancy, labour, birth, and postpartum periods. It also includes those providing parenting support, long-term follow-up care, and evaluation and rehabilitation. The care is offered in a number of settings: primary care facilities, community-based organizations, and the places where women actually give birth. Professional education and support is provided via maternal and newborn outreach programs.

Primary Care. Most preconception, prenatal, and postpartum/newborn services are provided in primary care settings, including office-based individual or group practices, community health centres or health department clinics, and the home. Offered are basic preventive and health promotion services.

Community-based Care. Many services are provided through community-based organizations, either non-governmental or governmental agencies. Programs include childbirth education, breastfeeding support, maternal and newborn bereavement, parent support, community-based nursing, child care, home care, family and social services, and infant development programs. As well, services are offered via health units, parent resource centres and maternity homes.

Childbirth Care. In Canada, the vast majority of births take place in hospital. Hospitals range in size from small units in rural or isolated communities, with fewer than 100 planned births per year; to large tertiary centres, with over 7000 births per year.[1] A few free-standing birth centres have emerged. Data suggest that free-standing birth centres provide a safe environment for births (Rooks et al., 1992).

Some women choose to have their babies at home. Indeed, several provinces have voiced their support for a woman's right to choose the place of birth, including the home (Eberts, 1987; Midwifery Implementation Council, 1995; Alberta Health, 1996). Home birth remains a controversial issue in Canada. Recent reviews of the literature indicate that studies to date have neither successfully nor definitively shown the superiority, in terms of safety, of either planned home births (for women at no identifiable risk) or hospital births. Home births have, however, shown better outcomes with strict screening, planning, and back-up arrangements for emergencies or referrals (Hoff and Schneiderman, 1985; Campbell and MacFarlane, 1986, 1994; Tew, 1990).

Similarities exist between free-standing birth centres, births at home, and small hospitals that provide services for those mothers and babies without identifiable risk associated with their pregnancy or birth. The basic services for such Level I facilities are summarized in the section on Level I care, found on page 14.

Maternal and Newborn Outreach Programs. The principal function of regional outreach programs is to assist agencies, institutions, and care providers to provide optimal care for their community through coordinated educational programs. Their responsibilities may include:

- development of continuing professional education;
- facilitation of professional interchanges and educational opportunities;
- coordination of annual conferences for the region;
- provision of advice regarding practice, care, policies, procedures, problem solving and equipment purchases;
- assistance with the collection and analysis of statistics pertaining to performance and outcome;
- provision of collaborative assistance in the introduction of new approaches to care;

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[1] According to the 1993 Survey of Routine Maternity Care and Practices in Canadian Hospitals (Health Canada and Canadian Institute of Child Health, 1995), there were 201 hospitals with fewer than 100 births per year, 138 with 101 to 300, 103 with 301 to 1000, and 130 with 1001+ births per year.

- development of plans for facilities;
- preservation of quality assurance and continuous improvement;
- sharing of information, newsletters, lending libraries, and manuals;
- assistance with liaison between agencies within the region;
- provision of a supportive environment for ongoing maternal and newborn care in the community; and
- facilitation of liaison between government and professional organizations.

Administration of Programs

Governing boards of hospitals and other health agencies that provide maternal and newborn care, administrative staff, and professional leaders within organizations must demonstrate their commitment to the implementation of family-centred care. As well as planning and setting priorities, they must implement policies, programs, and practices that address the unique physical and psychosocial needs of mothers, infants, and families.

An organization's vision and energetic leadership is translated into action, and reinforced, within the departments and on the front lines. In effect, the degree to which women and their families receive family-centred care depends primarily on the priorities and commitment of the governing board, administration, and professional leadership of an institution. Meeting this challenge needs a clearly defined and articulated vision; it requires an organizational structure that fosters interdisciplinary cooperation and collaborative relationships with families. It also requires committed and energetic leadership (Johnson et al., 1992).

Every organization should have a mission statement and a summary of philosophy or values. The mission statement sets forth the basic purpose of the organization. It answers the following questions: Who are we? What are we doing? For whom? and Why? It reflects the needs of the community, as well as the principles of family-centred maternity and newborn care. The set of values and beliefs, whether implicit or explicit, guides an institution in carrying out its mission, and in defining what is important — both to the organization and to those who work for it (Johnson et al., 1992). The mission statement and the summary of values and beliefs are important vehicles for communicating with families, and should be made available to them.

Regardless of their structure, agencies or institutions must encourage interdisciplinary cooperation and communication. In larger organizations, senior managers should represent various disciplines, thus exemplifying this interdisciplinary collaboration and respect for family and professional partnerships. An organizational chart should group departments in ways that will foster collaboration and mutual problem solving (Johnson et al., 1992).

Table 2.2 provides a checklist of the basic policies and programs that facilitate the implementation of family-centred care.

Table 2.2 Policies and Programs: A Checklist

1. Does the institution have a written philosophy (or standards of care documents) that clearly reflects the pivotal role of parents and families?
2. Are the mechanisms clear for facilitating collaboration between families and professionals, in terms of the design and implementation of hospital policies and programs?
3. Is there a maternal and newborn committee comprising the providers and families?
4. Are there mechanisms for providing accurate descriptive and statistical information to the public about practices and procedures?
5. Are there established policies and settings that provide women with unrestricted access to birth companions of their choice, and to supportive care during labour and birth, in the agencies providing those services?
6. Are there established policies and services that enable women to make informed choices about all matters pertaining to pregnancy, labour, birth, and newborn care?
7. Are there established policies and settings that discourage the routine application of practices and procedures that are unsupported by scientific evidence?
8. Are there established policies and settings that encourage mothers, babies, and families to remain together?
9. Are there established policies and settings that strive to achieve the WHO-UNICEF "Ten Steps to Successful Breastfeeding"? (See Chapter 7.)
10. Are there clearly defined policies and procedures for collaborating and consulting with other services?
11. Are there clearly defined policies and procedures for linking the mother, baby, and family to appropriate community resources?
12. Are there mechanisms for receiving feedback from parents regarding their satisfaction with hospital policies and programs?
13. Are there formal mechanisms in place for coordinating care among the hospitals, community health agencies, community support services, and primary community-based health care providers?
14. Does the architectural and interior design of the agency and its allocation of space meet and support the needs of women and families, thereby enabling family-centred care?

Adapted from: Johnson et al., *Caring for children and families: guidelines for hospitals*, 1992; and Coalition for Improving Maternity Services, *The mother-friendly childbirth initiative*, 1996.

All facilities, regardless of their structure, should have a multidisciplinary maternal and newborn committee that includes parents as well as representatives of the maternal and newborn health care team. The committee should meet on a regular basis to set policies, to monitor the implementation of these policies, and to evaluate the quality of care on an ongoing basis. (See Chapter 1 for ways to facilitate parents' participation on these committees.) Depending on the size and mandate of the facility, subcommittees can be developed for mortality/morbidity reviews, education, research, and use of statistics. At times, the maternal and newborn committee should address these activities directly. Each group should keep written minutes and have other communication available to all staff and senior management.

Guidelines for Care

All facilities providing maternal and newborn care are responsible for:

- promoting, at the community and society level, policies and practices that are evidence-based and facilitate the health of mothers, babies, and families;
- participating in a network of regional maternal and newborn services, in order to provide appropriate levels of care as required;
- maintaining a collaborative atmosphere between all components of the care continuum, thereby ensuring provision of comprehensive, accessible care;
- fostering an interdisciplinary model of care;
- facilitating care that incorporates the input of the women and families concerning their needs;
- evaluating the function and outcome of their programs; and
- supporting the acquisition of new knowledge to improve care and outcomes.

Ambulatory Prenatal Care

Prenatal care is provided in a variety of settings: physicians' or midwives' offices; community health centres; and ambulatory care units in hospitals, health units, and nursing outposts. (See Chapter 4.)

AMBULATORY PRENATAL CARE PROVIDED AT THE PRIMARY LEVEL: LEVEL I

Prenatal care provided in primary-level facilities covers assessment of the normal progress of pregnancy. This includes physical examinations; routine laboratory assessments; appropriate screening tests; identification of risk with referral as necessary; prenatal information and education; and support and counselling related to pregnancy, birth, and parenting.

AMBULATORY PRENATAL CARE PROVIDED AT THE SECONDARY LEVEL: LEVEL II

Prenatal care provided in secondary-level facilities consists of primary care, care for women with frequently seen obstetrical and medical problems, and fetal diagnostic testing (biophysical profile, non-stress testing and basic ultrasound of fetus, and amniotic fluid analysis).

AMBULATORY PRENATAL CARE PROVIDED AT THE TERTIARY LEVEL: LEVEL III

Prenatal care provided in tertiary-level facilities refers to primary and secondary care; care related to complex and/or severe maternal problems; advanced fetal diagnoses (e.g. targeted ultrasound and fetal echocardiography); fetal therapy (e.g. intrauterine fetal blood transfusion and treatment of cardiac arrhythmias); and medical, surgical, and genetic consultation for fetal abnormalities (March of Dimes Birth Defects Foundation, 1993).

Labour and Birth, Postpartum, and Newborn Care

LABOUR, BIRTH, POSTPARTUM AND NEWBORN CARE AT THE PRIMARY LEVEL: LEVEL I

All facilities (e.g. hospitals, birth centres) providing planned care during labour, birth, and the immediate postpartum period for women, newborns, and families should:

- provide care for healthy mothers, babies, and families, or those with few immediate complications;
- have a family physician, obstetrician, or midwife available for birth *and* a second professional, skilled in resuscitation, available for each baby;
- have a written screening and triage policy and transfer women during the antenatal and intrapartum period accordingly;
- establish procedures and protocols for an emergency response (e.g. cesarean birth), which may include transfer, so that response occurs in a

timely fashion and is based on the principles of that facility's risk management protocol (Iglesias et al., 1998);

- have appropriately trained individual(s) available to administer pharmacological pain relief;
- provide guidelines for maternal/fetal assessment and care during labour, birth, newborn resuscitation, and immediate postpartum care of the mother and baby;
- provide guidelines for common emergencies of labour and birth, including shoulder dystocia, pregnancy-induced hypertension (PIH), and postpartum hemorrhage;
- provide emergency care for the mother or baby;
- provide guidelines for assessment, retention, and transfer of women and newborns with antenatal and intrapartum complications;
- initiate safe and effective transfers when required;
- incorporate professional standards into guidelines for the care of women, newborns, and families;
- have accessible laboratory, radiology, ultrasound, and pharmacy support on a 24-hour basis (See Ancillary Services, page 28);
- have the ability to do blood gas analysis. The current guidelines on fetal surveillance have suggested that Level I facilities might not require blood gas analysis of cord or scalp samples. Rethinking of this issue by the working group of the Society of Rural Physicians of Canada, the College of Family Physicians of Canada, and the Society of Obstetricians and Gynaecologists of Canada (Iglesias et al., 1998) would strongly recommend that any facility conducting maternity care should have the capacity for blood gas analysis. It is recognized that this will take some time to implement; however, this time should be short;
- have the ability to provide services related to assessment and immediate and continuing care of the mother and newborn, infant feeding (especially breastfeeding), and health education regarding the future needs of both mother and baby;
- establish mechanisms for linking with community-based care;
- initiate strategies to inform parents of the scope and philosophy of care being provided;
- put mechanisms in place for regular review of all policies and procedures so they are updated according to best-practice evidence; and
- establish mechanisms for review of outcomes of care.

LABOUR, BIRTH, POSTPARTUM, AND NEWBORN CARE AT THE SECONDARY LEVEL: LEVEL II

The population density, geography, and specifically the proximity of Level II facilities to a tertiary care centre will affect their scope of services. A Level II facility has the same basic requirements as a Level I facility; in addition, it should have the ability to:

- care for pregnant women at ≥ 32 weeks' gestation who may experience certain complications, including continuing tocolysis;
- provide induction and augmentation of labour (this service may be modified to meet regional circumstances and needs; it may also be available in Level I facilities equipped to deal with obstetrical emergencies);
- care for women with selected problems such as pre-eclampsia and simple hypertension;
- care for babies with mild to moderate respiratory distress syndrome, suspected neonatal sepsis, hypoglycemia, and postresuscitation problems of mild or moderate severity;
- establish procedures and protocols for emergency response, including emergency cesarean birth, so that physicians respond to a call within 15 minutes and are in the hospital within 30 minutes thereafter;[2]
- as necessary, provide continuous electronic fetal monitoring, external or internal (this service may also be available in Level I facilities equipped to deal with obstetrical emergencies);
- provide blood gas analysis (cord, scalp), non-stress testing, and ultrasound assessment. In the absence of scalp sampling, the data show a rise in the cesarean birth rate, when a health care provider is not able to be reassured in those situations where a scalp pH would enable a provider to continue following the labour. Achieving this will require having staff skilled in performing this procedure and access to appropriate laboratory services;
- care for newborns with birth weights of 1500 g or greater, including ventilation support while awaiting transport or for short term, as defined by regional policy (may be modified to meet regional circumstances and needs);
- provide continuing care of relatively stable, low birth weight babies;
- maintain a defined relationship with Level I centres in their region, including mechanisms for collaboration, consultation, transport, return transport, information sharing, and education;

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[2] All response times are based on practical recommendations; they are not evidence-based.

- consult, refer, and/or transport mothers and newborns with complex problems to a tertiary (Level III) centre;
- make available social work, pastoral care, nutrition, surgical, and diagnostic imaging services;
- receive and care for newborns transferred back to their community from Level III centres;
- as necessary, directly access specialty consultations from obstetricians and pediatricians;
- provide regular morbidity and mortality reviews; and
- maintain an on-site physical and organizational integration with a gynecological program/department for optimal clinical care and education in women's health.

LABOUR, BIRTH, POSTPARTUM, AND NEWBORN CARE AT THE TERTIARY LEVEL: LEVEL III

A Level III facility has, in addition to the care provided in Levels I and II:

- the ability to care for women whose pregnancies may be at risk (e.g. are less than 32 weeks' gestation, or who have premature rupture of membranes or preterm labour or bleeding, severe medical complications such as cardiac functional impairment, requirements for complex diagnostic or therapeutic procedures, pregnancies with concurrent cancer, and/or complicated antenatal genetic problems);
- the ability to care for babies with severe respiratory distress syndrome, sepsis, severe postresuscitation problems, significant congenital cardiac and other systems diseases, and babies with special needs (e.g. prolonged parenteral nutrition);
- a system for receiving as referrals women whose pregnancies are considered to be high risk;
- a neonatal transport program;
- the resources to diagnose and treat pregnant women and newborns with severe complications;
- the resources to provide assisted ventilation on a short- and long-term basis;
- access to subspecialty consultants (e.g. maternal/fetal medicine specialists, neonatologists, and other subspecialists as required);
- immediate access to adult medical, surgical, and psychiatric consultations;

- coordination of an established long-term follow-up program for babies with complications at birth, including criteria for long-term follow-up to monitor psychological, neurological, sociological, and physical outcomes. The program should have standardized assessment methods, rehabilitation programs, and research tools to evaluate costs and effectiveness of care. Requisite information made available to the units providing care on a regular basis will permit ongoing evaluation and improvement of care; and
- on-site physical and organizational integration with a gynecological program/department for optimal clinical care and education in women's health.

These classifications, however, are not absolute. Modifications may be needed to suit regional needs. For example, geographic considerations, population density, and availability of specialized personnel may dictate that certain smaller Level I and II units care for mothers and infants who, in other circumstances, would have been rapidly transferred to a higher level of care. On occasion, certain highly specialized services may require referral outside the region. These situations are best addressed by written regional policies.

Personnel Requirements: Labour, Birth, and Immediate Postpartum Care

Core Requirements for Personnel

Regardless of location, health professionals providing direct care for women and newborns during labour, birth, and immediate postpartum should have:

- a demonstrated understanding and practice of the principles and values of family-centred care outlined in Chapter 1;
- current certificates of registration from the relevant professional college(s);
- knowledge and skill in supportive care for labour, birth, and breastfeeding;
- skills and knowledge related to physical and psychosocial risk assessment;

- immunity to rubella and hepatitis B, or documentation of refusal;
- regular performance evaluations and/or peer reviews, providing evidence of current knowledge and skills vis-à-vis care of women and families;
- a basic understanding of, and regard for, research and the evidence-based approach to care; and
- planned learning opportunities.

It is the responsibility of all health care providers to work together to ensure that the emergent needs of mothers and babies are met.

PERSONNEL FOR INFANT RESUSCITATION

Personnel skilled in neonatal resuscitation and able to function as a team should be available for every birth. The size and composition of this team will vary with the birth rate and the designated care level of the birth site in question. The team may include nurses, family physicians, midwives, pediatricians, obstetricians, anesthetists, and respiratory therapists.

Even after a healthy pregnancy, newborns may experience sudden, unexpected difficulties in their first moments of life that require immediate intervention by skilled personnel. It is therefore recommended that, in addition to the professional responsible for the birth (i.e. the physician or midwife), a second professional be present, with primary responsibility for the baby. The second professional would have skills related to cardiopulmonary resuscitation (CPR), ventilation with a bag and mask, and chest compressions. If this person lacks the skills for more extensive resuscitation (endotracheal intubation and the use of medications), a person with these skills should be available in the facility to assist immediately when called. Each birthing area should define the risk factors that require the attendance of two people dedicated to the baby's care at birth. Until another member of the medical staff takes over, the care of the infant remains the responsibility of the obstetrician, family physician, or midwife attending the birth. To effectively exercise this responsibility, the obstetrician, family physician or midwife should be registered as a current provider of neonatal resuscitation.

Skills in neonatal resuscitation are obtained through the Neonatal Resuscitation Program (NRP) coordinated by the Canadian Paediatric Society and the Canadian Heart and Stroke Foundation. Both registration at either the provider or instructor level and periodic reregistration are essential for all personnel likely to care for babies immediately after birth.

The efforts by institutions to provide on-site programs to achieve this goal should be supported.

Level I Personnel

LEVEL I: LABOUR, BIRTH, AND IMMEDIATE POSTPARTUM CARE

Minimal staffing requirements should be established based on the following recommendation: one-to-one registered nurse, or midwifery care, for women in active labour through the completion of fourth stage.

Nursing Care. The registered nurse should have appropriate training commensurate to the type of women served. The nurse's responsibilities are outlined in the following table.

Table 2.3 Registered Nurse: Responsibilities

- Initial evaluation of women in labour
- Assessment of the presence or absence of complications and triage
- Supportive care during labour and birth (See Chapter 5.)
- Assistance with comfort and pain relief
- Continuing assessment of the woman and fetus during labour and birth*
- Assessment of progress of labour
- Evaluation of uterine contractions
- Reporting of unusual or abnormal findings to appropriate health team members
- Response to emergencies
- Performance of maternal and infant CPR
- Stabilization of women for transfer

* Including auscultation of the fetal heart rate and electronic fetal heart-rate monitoring where electronic fetal heart-rate monitors are used.

Facility personnel should identify a core group of nurses whose ongoing experience in caring for women during labour and birth fosters confidence. Depending on a facility's geographic location and population, staff may have to be sent to a larger centre to acquire experience.

Physician and Midwifery Care. All births should be attended by a physician and/or a midwife. The physician and/or midwife should be available to the birth facility in a timely fashion in accordance with the principles of that facility's risk-management protocol. In cases of unavoidable complications of birth, emergency cesarean birth, or unexpected concerns regarding the fetus, Level I facilities should be able to obtain the services of another appropriately trained professional to assist the primary physician or midwife. Requirements as to personnel availability for newborn resuscitation are described in the previous Infant Resuscitation section. Level I facilities require appropriately trained individuals to be responsible for and administer pain relief, both non-pharmacological and pharmacological. Women who are not receiving the ongoing, established care of a physician or midwife need a plan that will provide such coverage.

LEVEL I: POSTPARTUM MATERNAL/NEWBORN CARE

Minimal staffing requirements should be established based on the following recommendation: one registered nurse to four healthy mother/baby dyads, 24 hours per day.

Nursing Care. To date, the ratios for postpartum nurse-mother/baby care have been based on practical recommendations, rather than on studies with clearly identified objectives and evaluations. Much variation obviously exists in women's situations. Hence judgment is required. The decision regarding nursing needs should be based on, among others, a concrete assessment of the immediate health of the mother and baby, the intensity of care needs, parity, the experience and skills of the parents, and the level of prenatal preparation and family support.

Mother/baby dyads (pairs) should be cared for by a registered nurse with appropriate, specialized training in maternal and newborn care, care that is commensurate to the needs of both women and newborns. (See Chapter 6 for further discussion of combined mother/baby care.) Registered nurses are responsible for initial and ongoing assessment, education, transition to the community, and the organization of follow-up for mother and newborn. These nurses should have training and experience in recognizing the normal and abnormal physical and emotional characteristics of both mother and newborn. They must have the ability and commitment to assess the readiness of the woman and family to respond to new family needs. They must have the necessary skill and knowledge to assess and support breastfeeding, with training in an acknowledged program.

It is important that the mother and infant be closely observed in the first hours following birth, so that the mother's recovery can be assessed and the baby's stability monitored. To promote the mother-infant relationship, hospitals are encouraged to make initial observations while the baby is with the mother. Each facility should have a documented policy of the assessment and criteria for moving the infants to a specialized nursery area, the neonatal intensive care unit, or the healthy mother-infant care area.

Physician and Midwifery Care. All postpartum women and newborns should have an identified physician or midwife responsible for their care. They should be available to the hospital in a timely fashion, according to the principles of that facility's risk-management protocol. They should be able to detect physical and/or functional problems in the mother and/or newborn, and to initiate treatment needed for stabilization and other emergency care when required.

Level II Personnel

LEVEL II: LABOUR, BIRTH, AND IMMEDIATE POSTPARTUM CARE

Nursing Care. Level II care, in addition to fulfilling the care requirements of Level I, must have a registered nurse who has advanced training and experience in providing care to women with complications of pregnancy, labour, and birth in the labour and birthing area at all times. Preferably, this nurse will possess post-RN advanced preparation[3] in nursing during labour and birth. As well, this nurse must be skilled in the techniques of electronic fetal heart-rate monitoring, recognizing and reporting abnormalities, and supervising the performance of nurses with less training and experience.

Physician and Midwifery Care. In addition to the physician and midwifery care provided in Level I care, a Level II centre should offer a full range of obstetric anesthesia services by a qualified anesthetist or family physician. As well, obstetric, pediatric, and other medical, surgical, radiology, and pathology consultation should be readily available. Physicians for obstetric and pediatric consultation should respond to being called within 15 minutes and be able to be at the hospital within 30 minutes thereafter.[4] There should be personnel skilled in managing maternal and newborn emergencies in the hospital, who can provide initial care under defined hospital protocols until the responsible physician arrives.

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[3] Advanced preparation can take many forms and depends on the region. It can be offered through local community colleges, regional perinatal programs, universities, or in-house.

LEVEL II: POSTPARTUM MATERNAL/NEWBORN CARE

Nursing Care. In addition to providing all Level I care, a Level II nurse must have specialized training and experience in postpartum care for mothers and babies who experience complications, and be able to provide support for mothers and families with infants requiring intensive care. These nurses shall preferably possess post-RN advanced preparation in postpartum nursing. They are also responsible for coordinating visits and communication with the neonatal intensive care unit; and for recognizing the need for other services, including nutrition, social work and pastoral care, and for lactation consultants. As well, they should have the skills and knowledge to care for mothers and babies with common obstetrical postpartum and neonatal concerns.

Physician and Midwifery Care. All postpartum women and newborns should have an identified physician or midwife responsible for their care.

Allied Health. A registered dietician with knowledge of maternal and newborn nutrition as well as a clinical social worker should be available weekdays. An individual committed to pastoral care and a lactation consultant for breastfeeding assessment, support, and education should be available daily. Other personnel such as a physiotherapist, occupational therapist, audiologist, pharmacist, psychiatrist, and ethicist are also desirable. They should be used as their availability permits and as the needs of the women and families require.

LEVEL II: NEONATAL CARE

Minimal staffing requirements should be established based on the following recommended ratios: one registered nurse to two infants for more acute or unstable babies; and one nurse to three infants for those babies requiring convalescent care.

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[4] All response times are based on practical recommendations; they are not evidence-based.

Nursing Care. Registered nurses caring for ill newborns should have education or experience in neonatal nursing and in the care of ill newborns, *including a neonatal resuscitation program (NRP) or its equivalent*; they should also have post-RN advanced preparation in neonatal nursing. All nurses caring for ill newborns must possess demonstrated knowledge concerning the observation and treatment of these newborns. As well, they should have skills in monitoring, establishing, and maintaining intravenous infusion; gavage feeding; measurement of blood pressure; and management of arterial lines.

Physician Care. In general, all babies requiring Level II care should be under the care of a pediatrician or neonatologist. Family physicians may care for stable babies requiring convalescent care, as determined by hospital policy.

If babies are on mechanical ventilation, a physician, nurse, or respiratory therapist with intubation skills is required in-house 24 hours a day. To help maintain quality of care, many units benefit from having a neonatologist or pediatrician with specialized interest in neonatal care take overall responsibility for care of all babies in the unit. Responsibilities of this individual could include integrating and coordinating the following: a system for consultation and referral; in-service education programs; communication and coordination with a maternal and newborn team; and definition and establishment of appropriate procedures for the nursery care evaluation, research, and neonatal follow-up.

Allied Health. When a neonate is on mechanical ventilation, a respiratory therapist, certified laboratory technologist or blood gas technologist, and an x-ray technologist should be available in-house on a 24-hour basis.

Level III Personnel

LEVEL III: LABOUR, BIRTH, AND IMMEDIATE POSTPARTUM CARE

Nursing Care. Level III care, in addition to fulfilling the care requirements of Levels I and II facilities, must at all times provide, within the labour and birth unit, registered nurses who are skilled in the recognition and nursing care of labour and birth complications. These nurses must also have post-RN advanced preparation in providing care to women with complications of labour and birth. In addition, the general standards of an approved training course in high-risk fetal health surveillance must be met, as well as one-to-one nurse:patient ratios.

Physician and Midwifery Care. In addition to Level II care, each facility should address mechanisms to ensure that an obstetrician is available in-house on a 24-hour basis when women who have significant risk associated with their pregnancy/birth are present. This will require having sufficient human resources and appropriate financial compensation. In Level III facilities, anesthesia services should be available for obstetrics immediately upon being called.

LEVEL III: POSTPARTUM MATERNAL/NEWBORN CARE

Nursing Care. In addition to providing all Level II care, the Level III nurses, who must have specialized training and experience in postpartum care for mothers who have had complications of labour and birth or have ill infants, are responsible for providing support to those mothers and families whose infants require intensive care. These nurses shall have post-RN advanced preparation in postpartum nursing. They are responsible for coordinating visits and communication with the neonatal intensive care unit and for recognizing the need for consulting help in nutrition, social work, pastoral care, and lactation as well as the home/community arenas.

LEVEL III: NEONATAL CARE

Minimal staffing requirements may exceed the ratio of one registered nurse to one baby for those infants requiring extensive physiological support. The requirements may be one nurse to one to two babies for more stable babies requiring acute care. However, a nurse should not be responsible for more than one baby on a ventilator plus one other non-ventilated baby, dependent upon the condition of both babies.

Nursing Care. In addition to the Level II requirements, nurses working in the neonatal intensive care unit shall have demonstrable knowledge in the assessment and treatment of extremely ill neonates. This includes resuscitation (NRP) and stabilization of infants at birth; provision of support for grieving or anxious families; techniques of cardiorespiratory monitoring; care of infants on cardiorespiratory support; care of central intravenous lines for parenteral nutrition; administration of surfactant;

perioperative skills; knowledge of community resources for families; knowledge and skills in discharge and transfer planning; and skills and experience in parent education and support.

Advanced-practice nurses (clinical nurse specialists and neonatal nurse practitioners) may be required in Level III neonatal intensive care units. The number required and the actual nurse:baby ratios will depend upon the presence (or absence) and number of neonatology trainees available on the unit.

Physician Care. All babies requiring acute care on a 24-hour basis should be cared for by a qualified neonatologist. For purposes of communication and to obtain urgent care when required, it is highly desirable that at any one time a single neonatologist direct the care of babies requiring acute care. Infants in a Level III unit who require Level II care should be treated as previously discussed (see Level II care section). Once care has been transferred from one physician to another, it is essential to transmit all information critical to the patient's care, and to ensure that the transfer process occurs in a manner in which the physician responsible for directing care is clearly identifiable at all times.

Suggested staff:infant ratios for "hands-on" physicians and nurses with advanced preparation (e.g. advanced practice nurses, clinical nurse specialists, or neonatal nurse practitioners) may vary, based on the clinical infrastructure of the unit and the experience of the provider. The following guidelines are suggested. Note that one provider may be responsible for various different categories of patients.

Ratios of Neonatologists to Babies: Guidelines

Days (until care plans are determined and implemented)	
• Unstable babies requiring cardiorespiratory support	1:4
• Stable babies requiring acute care	1:8 to 1:10
• Babies requiring Level II care	1:12 to 1:16
Nights	
• Unstable babies requiring cardiorespiratory support	1:4
• Stable babies requiring acute care	1:12 to 1:16
• Other babies	emergency care as required

These recommendations are specific to care in the neonatal intensive care unit. Involvement in other activities (e.g. transport, attendance at births, education, and research) will require additional coverage.

Subspecialists in cardiology, pediatric surgery, neurology, and genetics should be available for consultation 24 hours a day. On-site consultation should be available during the day from pediatric subspecialists in nephrology, endocrinology, gastroenterology, nutrition, infectious diseases, respirology, hematology, and other identified areas. Similarly, pediatric surgical subspecialists (e.g. cardiovascular surgeons; neurosurgeons; and orthopedic, ophthalmologist, urologic and otolaryngologic surgeons) should be on hand for consultation and care. Physicians skilled in administration of neonatal/pediatric anesthesia should be available as required.

Allied Health. Respiratory therapists (RRTs), certified laboratory/ technologist/blood gas technologist(s), and radiology technologist(s) should be available in-house on a 24-hour basis. Although numbers may vary with duties of the RRT staff, the ratio of therapists to ventilated infants should generally be 1:4-6. When numbers of babies warrant, it is highly desirable to have RRTs dedicated to the neonatal intensive care unit and its associated programs.

As well, the following personnel are needed: a registered dietitian with knowledge of parenteral/enteral nutritional care for babies at high risk; maternal and newborn social workers; lactation consultant(s); dedicated pastoral care personnel; a developmental physiotherapist; personnel with appropriate training and the support to conduct a maternal and newborn continuing education program; and an engineer with expertise in biomedical electronic monitoring and specialized pharmacy.

Ancillary Services

The following grid outlines the requirements for ancillary services for maternal and newborn care.

	Level I	**Level II**	**Level III**
Laboratory (micro-technique for neonates)			
Within 1 hour	Hematocrit, glucose, total bilirubin, routine urinalysis, blood gases	Level I plus: electrolytes, BUN, creatinine, coagulation studies, blood from type and screening program	Levels I and II plus: special blood and amniotic fluid tests
Within 1-6 hours	CBC, platelet appearance on smear, blood chemistries, blood type and crossmatch, Coombs tests, bacterial smear	Level I plus: WBC differential, coagulation studies, magnesium, urine electrolytes and chemistries, hepatitis B screen	Levels I and II
Within 24-48 hours	Bacterial cultures and sensitivities	Level I plus: liver function tests, metabolic screening	Levels I and II plus: special tests, including plasma and urine animo acids and organic acids
Within hospital or facilities available	Viral culture and antibodies	—	—
Radiography and ultrasound	Technicians on call 24 hours/day Portable x-ray and ultrasound equipment available to labour and delivery rooms and to nurseries	Experienced radiology technicians immediately available in hospital (ultrasound on call) Doppler ultrasound capabilities Professional interpretation immediately available Portable x-ray equipment Ultrasound equipment: in labour and delivery and/or nursery areas Equipment for emergency GI, GU, or CNS studies available 24 hours/day	Computerized axial tomography Ultrasound equipment in labour and birth area, and available in neonatal intensive care unit Magnetic resonance imaging (may require patient transfer)
Echocardiography	—	Available weekdays, with interpretation within 24 hours	Available with interpretation within 6 hours, 24 hours/day
Blood bank	Technologists on call 24 hours/day, availability of uncrossed negative blood for emergencies	Experienced technologists immediately available in hospital for blood-banking procedures and identification of irregular antibodies	Resources centre for network Direct communication to labour and delivery area, and nurseries
Electroencephalography	—	Available weekdays with interpretation within 24 hours	As above
Pathology	Prior agreement with another centre required (transfer of baby or specimen at no cost to the patient)	General pathologist to be available daily	Maternal and newborn pathologist to be available daily

Adapted from: March of Dimes Birth Defects Foundation, *Toward improving the outcome of pregnancy*, 1993.

Program Administration: Levels I, II, and III

Administrative responsibilities for health care personnel participating in maternal and newborn care should be clearly identified. The services geared to mothers and babies at risk may be administratively linked or separated into different units (e.g. maternity, newborn). Each service should have a group of interdisciplinary clinicians (e.g. nurse, physician, midwife, lactation consultant, social worker, and/or other health professionals) with responsibility for development and implementation of policies, procedures, and general administration of care. Each unit should determine the administrative requirements for all health care disciplines. The staff of any one unit may include one or more managers, depending on their experience.

In the Level II maternal and newborn care units, one obstetrician with special interest and training in maternal-fetal medicine, one pediatrician with special training in neonatal-perinatal medicine, and one nurse with advanced preparation in this specific area should together act as co-directors. In Level III units, one maternal-fetal medicine physician, one neonatal-perinatal medicine physician, and potentially two nurses (one with maternal-fetal qualifications and one with neonatal qualifications) should be part of the management team. A Level III neonatal intensive care nursery situated in a children's hospital should be directed by a team of medical and nursing personnel with the appropriate clinical and administration skills. A specialist in neonatal-perinatal medicine and a nurse with advanced preparation in neonatal intensive care nursing would be part of that team.

Managers and senior staff should be aware of, participate in, and initiate objectives for the unit related to quality assurance; educational activities, including local, provincial/territorial, national, and international conferences; and research activities. They should also encourage co-worker support of, and participation in, local and multicentre studies and trials.

Policies and Procedures

Policies and procedures need to be written, reviewed, and updated regularly. They should be available for reference by all facility staff members. A mechanism should be put into place for the regular review of all policies and procedures; when new evidence becomes available, they can be updated accordingly.

Written policies and procedures include, but are not limited to, those described in Table 2.4.

Table 2.4 Written Policies

Policies that deal with the following topics should be documented:

- communication and linkages with the community for the care and support of women, infants, and families
- admission of women, infants, and families
- assessment and criteria for discharge of women and babies
- referral to community services
- identification and referral of women and/or infants in actual or potentially abusive situations
- emergency transfer of mothers and babies, including the requirement that prior arrangements for the care of the mother and baby be made with a receiving health facility in the event of an emergency
- newborn resuscitation
- breastfeeding support
- maintenance of health records
- infection control and biohazard precautions
- storage of medications and emergency drugs
- development of an information system pertaining to safety practice and workplace hazardous materials
- response to maternal/newborn emergencies
- evaluation of care and quality improvement
- internal disaster procedures, including fire
- personnel policies

Records

Health records provide a format for continuity of care and documentation of legible, uniform, complete, and accurate maternal and newborn information. The goal is to provide readily accessible information to health care providers via a system that protects confidentiality and provides for storage, retrieval, and prevention of loss.

Health records need to be maintained in a confidential and secure manner. Every entry in a mother's or newborn's health record should be dated and signed.

Objectives related to health record keeping are as follows:

- to facilitate communication;
- to facilitate transfer of accurate information to different levels of care (for mother and neonate);
- to make health care more effective with regard to outcomes and costs;
- to facilitate quality assurance processes;
- to avoid duplication of information collection; and
- to promote information sharing with families that may require assistance in decision making, review of childbirth events, and education.

The Canadian Perinatal Surveillance System (CPSS), Laboratory Centre for Disease Control, Health Canada, is preparing a perinatal surveillance system for data collection and analysis. Standardized health records for antenatal, birth, and newborn care will serve both as documentation for clinical care and as an instrument for data collection that facilitates consistency and avoids duplication. (See description in Appendix 1.)

Education

Ongoing learning in the maternal and newborn care area is essential as new information and best-practice evidence continues to emerge. All caregivers and parents need opportunities to learn and should exercise their personal responsibility in this area. Any educational endeavour must take into account people's differing learning styles, the time available for learning, the content, the skills to be shared, and the financial and personnel resources available.

Health Education for Women and Families

Just as parents play an active role in decisions regarding care and lifestyle, caregivers have a responsibility to ensure that women and their families have sufficient information to make decisions. Strategies include prenatal classes, written material, commercial books, community support groups, telephone help lines, and audiovisual materials. Information of varying quality is also available from television, friends and family, the Internet, and culturally based traditions. Health care providers should spend time with parents, helping them not only to identify good sources of information but also to determine its value and meaning.

Wherever or however education takes place, whether in a class or group setting, or in the care provider's private office, the critical guiding principles should be those of adult learning; that is, a learner-centred perspective. The principles of adult learning are summarized in Table 2.5.

Table 2.5 Adult Learning Principles

- The care provider has the role of a facilitator, not a teacher.
- The facilitator emphasizes recognizing the validity of the learner's background and experiences.
- The facilitator shares control of the content, or what the learner should or needs to know, so that the content means something to the learner.
- The facilitator shares control of the process; that is, how the learner will learn.
- An emphasis is placed on interdependence in the learning situation.
- The learner develops as a result of having her or his learning needs met.
- Both facilitator and learner accept responsibility for the learning situation.
- The learner is involved in every aspect of the learning content and process.

Regardless of the topic or the strategy used to convey the information, certain principles of health education must be inherent in all developed or recommended material. These principles should be considered for all information provided to parents, including consents and research information. Table 2.6 describes these principles.

Table 2.6 Principles for Educational Materials

Readability

The literacy of different populations varies, based on education, learning differences, and exposure. For written materials geared to the general population, a Grade 5 reading level is considered desirable. More (or less) sophisticated material may be required for certain groups. The best way to determine readability is to pretest material with the target population.

Amount of information

Limited content should be presented at one time and with regard to a given piece of written material. The more diverse the material, the more difficult it is for individuals to remember. For instance, a videotape that deals with all aspects of breastfeeding is less likely to be remembered than material focused on the one particular aspect needed at the time. Written information can be limited by covering only one topic per handout.

Consistency of information

Development of written and audiovisual material in collaboration with community groups and agencies, other facilities, and a multidisciplinary team ensures increased likelihood of validity, consistency, and applicability.

Accuracy of information

Information requires regular review and team consensus. A process should be put into place to ensure that the content and attitude conveyed in the material reflects current evidence, practice, and availability.

Timing of information

Evaluation of how and when to provide information is key. The "teachable" moment is often alluded to in educational literature. Ideally, health care providers should be available at the teachable moment: that time period when the learning need is most apparent.

Documentation and related legalities

An important part of the health record is the health professional's documentation of the health education provided directly to, or being obtained by, the women and families. A form for health education documentation may be helpful. Maintaining a copy of educational material is important.

Education for Health Professionals

The agency and the professional will usually share responsibility for maintaining competency and skills; however, there is an increasing trend toward personal responsibility. Whereas some of the specific competencies and behaviours needed are delineated by professional colleges, others reflect the needs and standards of the clinical care unit or agency. Documentation of participation, achievements, and future learning objectives regarding education should be a component of annual performance reviews and/or renewal of privileges.

Learning opportunities must be multidisciplinary, with all responsible personnel participating. This includes physicians, nurses, social workers, nutritionists, lactation consultants, respiratory therapists, and many more. Identification of topics may stem from new treatments, changing systems, clinical concerns, or research evidence. Varying levels of education are appropriate: from evidence-based care for healthy mothers and babies, to advances in care for mothers and babies who are at high risk.

Opportunities for learning may include rounds, workshops, conferences, learning packages, formal education programs, distance learning, self-study, and/or participation on new committees or in new projects or research. For maternal and newborn regions, coordination of educational efforts through organized regional programs allows for consistency of information and reduced duplication of efforts. Increasingly, facilities and agencies are using email, multisite conferencing, and/or Web site communication.

Certification courses, available locally or at a distance, are becoming the basis for upgrading and performance/competency standards.

Evaluation of Care

In all facilities, personnel offering maternal and newborn care should provide appropriate statistical documentation and the requisite background data for analytic studies. If maternal or newborn deaths occur, consent should be sought for an autopsy to confirm the diagnosis. A death certificate should be completed so that immediate cause(s) of death can be identified, along with important antecedent factors.

Evaluation of care involves careful documentation of both the process and outcome indicators of quality care. It also involves thoughtful review and analysis of the information.

Evaluation of maternal and newborn care is often considered the responsibility of regional and national organizations. Each unit and service provider, however, should participate in the evaluation to determine success in ensuring available, accessible, appropriate, and affordable care for mothers, babies, and families. As mentioned earlier, the multidisciplinary maternal and newborn committee fulfils this function.

Evaluation of care includes, but is not limited to, the following:

- continuous quality improvement, which involves feedback and audit activities;
- policies and procedures based on current information, which are reviewed on a regular basis;
- education of all staff, including self-education;
- assessment of the outcome, which should include at least a review of maternal and newborn mortality, major morbidity, and significant incidents;
- use of hospital services; and
- assessment of the mother's and baby's integration into the community, including breastfeeding support.

Evaluation of care may take many forms:

- mortality/morbidity/incident reviews
- consumer feedback
- epidemiologic analyses of problems and outcome
- assessment of commonly used investigations or treatment
- investigation into the mechanisms of disease and/or prevention
- studies of education and learning (including parents)
- studies related to resource usage.

Each agency/unit should have a written policy, including the current evaluation methods employed and a mechanism by which new evaluations may be approved for use.

Evaluating New or Existing Treatments, Technology, and Policies

Research studies related to new or existing treatments and technologies are strongly encouraged. All centres and individuals should contribute to this evaluation. Multicentred, multiagency collaboration builds upon the skills of many; it also strengthens the goals, relations, and consistent practices of the maternal/newborn network.

Before a new investigation or treatment or a change in policy and practice is introduced, the following questions should be considered:

Questions to Consider Before Implementing Changes

- Is there clear evidence of the benefits and/or risks?
- Should the treatment or policy be rigorously evaluated prior to full implementation?
- What is the nature of the problem for which a change is being considered?
- Is there need for consumer input?
- Are issues of compliance, education, and/or short- or long-term costs present?
- What outcomes must be monitored to measure the anticipated change?
- How will the findings be used and disseminated to staff in the agency or unit, the region, and beyond?

Because consequences of the care provided to mothers and newborn babies last for many years, all program managers must continue to evaluate and improve the care given the babies and their families. As an integral part of maternal and newborn services, evaluation and quality-improvement programs should be included within the context of the general administration and funding.

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APPENDIX 1

Canadian Perinatal Surveillance System

The Canadian Perinatal Surveillance System (CPSS) is part of Health Canada's initiative to strengthen national health surveillance capacity. The CPSS is an ongoing national health surveillance program delivered through the Bureau of Reproductive and Child Health in the Laboratory Centre for Disease Control (LCDC). Its mission is to contribute to improved health for pregnant women, mothers, and infants in Canada. The CPSS is guided by a multidisciplinary and multisectoral Steering Committee that provides guidance to the Bureau of Reproductive and Child Health with respect to the development and operation of the CPSS. Steering Committee members include expert representatives of national health professional associations, the provincial and territorial governments, consumer and advocacy groups, and federal government departments, as well as Canadian and international experts in perinatal health and epidemiology.

The CPSS is based on the concept of health surveillance as a systematic, ongoing process that provides timely, relevant information about trends and patterns in the health status of a population and the factors that influence health status. The components of surveillance are data collection, expert analysis and interpretation, and response (communication of information for action).

The aim of the CPSS is to collect and analyze data on all recognized pregnancies, regardless of their outcome — abortion, ectopic pregnancy, stillbirth or live birth — and on health during the first year of life. Currently, the CPSS uses data from multiple existing sources (mainly administrative) such as national vital statistics and hospitalization data. These data are analyzed collaboratively with perinatal health surveillance partners.

The response component of the CPSS consists of communication of information that will serve as an evidence base for action to improve the effectiveness and efficiency of clinical care and guide the development of public health policies and programs for maternal and infant health. The mechanisms and vehicles for information dissemination vary according to the target audience (which includes policy makers, health care providers, the public, researchers), and include fact sheets, peer-reviewed publications and the World Wide Web.

The CPSS has established short-, medium-, and long-term goals. In the short and medium term, the CPSS will:

- Continue to analyze and report on existing national perinatal health data — vital statistics, hospitalization databases and national surveys (e.g. National Longitudinal Survey of Children and Youth) — using a set of national perinatal health indicators.
- Work collaboratively with partners to standardize definitions of perinatal health variables across the country, and promote the addition of key variables to existing databases.
- Strengthen and expand surveillance in priority areas (e.g. congenital anomalies; and women's knowledge, perspectives, practices and experiences in pregnancy, birth, and parenthood).

The long-term goal of the CPSS is to establish a comprehensive national perinatal database through electronic transfer of data from vital event registration, hospital services, and community-based services.

If additional information is required, please contact:

Canadian Perinatal Surveillance System
Bureau of Reproductive and Child Health
HPB Building #7, A.L. 0701D
Tunney's Pasture, Ottawa, Ontario
K1A 0L2
email: CPSS@hc-sc.gc.ca
Internet: http://www.hc-sc.gc.ca/main/lcdc/web/brch/reprod.html

APPENDIX 2

ICD-9 and 10 Coding Interpretation and Diagnosis of Asphyxia

The Canadian Institute for Health Information (CIHI) has produced coding instructions for Canadian health care workers in regard to fetal asphyxia. These recommendations are based on recommendations received from the Society of Obstetricians and Gynaecologists of Canada (SOGC) and the American College of Obstetricians and Gynecologists (ACOG) regarding fetal asphyxia. The diagnosis of fetal asphyxia must be substantiated by a documented abnormal acid-base status on the basis of cordocentesis antenatally, fetal scalp sampling during labour and cord blood pH pCO_2 at birth. Without this evaluation, the diagnosis of fetal asphyxia cannot be entertained.

The low Apgar score, fetal bradycardia, fetal heart pattern variation, fetal tachycardia, non-reassuring fetal heart rate, and meconium cannot by themselves be identified or be the diagnosis of asphyxia. Health workers should only use the term "asphyxia" in the newborn for the clinical context of damaging acidemia, hypoxemia, and metabolic acidosis. The following criteria will apply for the diagnosis of birth asphyxia:

- profound metabolic or mixed acidemia, pH less than 7.0 on umbilical cord arterial blood sample;
- persistent Apgar score of 0 to 3 for longer than five minutes; and
- evidence of neonatal neurological sequelae (e.g. seizures, coma, hypotonia and one or more of the following: cardiovascular, gastrointestinal, hematological, pulmonary, or renal system dysfunction).

The SOGC and the ACOG recommend that all of these criteria be present for the diagnosis of asphyxia to be consigned in the chart.

— CHAPTER 3 —

Preconception Care

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Introduction

The health of the parents, prior to the woman's pregnancy, is vital to the ultimate health of the baby. Promoting the health of women, men, and families before pregnancy thus merits attention as an important aspect of family-centred maternity and newborn care.

The preconception period is not a neatly defined period of time. Throughout their reproductive lives, most women never really "know" when, or if, they will become pregnant. Women have choices, however, about becoming pregnant. Effective contraception has provided options (Raphael-Lerr, 1991). In addition, early pregnancy, or the first eight weeks, is critical as the time of greatest developmental risk to the fetus. In effect, many women may be unaware at this point that they are pregnant. Clearly, preconception care should be considered throughout one's life.

Preparing for a healthy pregnancy is not the sole responsibility of either the mother or the family. Individual life patterns, social support networks, and social living conditions are all important factors in conceiving, giving birth to, and raising healthy children. Poverty, for example, has a strong influence on pregnancy and children. Thus, it is critical that children and families are supported in safe and caring communities and in society in general.

Preconception care includes many components that are based on the principles of family-centred maternity and newborn care.

- It begins with attitudes and practices that value pregnant women, children, and families.
- It encourages women and men to prepare actively for pregnancy.
- It focuses on the many environments influencing the family, including social, psychological, spiritual, and physical.
- It respects the diversity of people's lives and experiences.
- It incorporates informed choice, thereby helping a woman and her partner to understand health issues that may affect conception and pregnancy.
- It enables women and men to be as healthy as possible, helping them recognize actual and potential problems (Moos, 1989).
- It attempts to identify parents with increased genetic risks and to provide them with sufficient knowledge to make informed decisions about their reproductive options (Levitt, 1993).

Health care providers have a responsibility to involve themselves in providing preconception care to individual women and families. As well, they should work as advocates to create healthy, supportive communities for women and men in the childbearing phase of their lives.

Health care providers involved in preconception care enter into a collaborative partnership with a woman and her partner, enabling them to examine their own health and its influence on the health of their baby. The health care provider's role is to provide accurate information; translate and communicate this information in a clear and precise way; support the woman and/or couple's decision-making process; and offer and refer them to relevant services when appropriate. The information provided and techniques used to encourage effective discussion and communication will allow the woman and her partner to make an informed decision about having a baby. The decision, however, ultimately rests with the parents.

Diversity

Since diversity is the norm in our society, health care providers must be aware of, and sensitive to, diversity and must plan preconception programs accordingly. For example:

- "Typical" family structures may include two-parent heterosexual couples; two-parent lesbian and/or gay couples; single-parent families of either gender; blended families; extended families including grandparents, aunts, uncles; or community families made up of close friends.
- Canadians come from a variety of ethnic and cultural backgrounds with differing beliefs and norms concerning pregnancy, parenting, and the roles of women, men, and children.
- The geography of our communities is vastly different, ranging from large urban centres to small, rural, isolated communities.
- The age at which women become pregnant has changed considerably over the past 20 years. The average age of first birth has increased. At the same time, the rate and number of teenage pregnancies has increased (Canadian Council on Social Development, 1997).

It is recommended that women and men from diverse backgrounds be involved in all aspects of preconception care, including determining priorities, developing and delivering programs, and participating on institutional/agency committees. Such participation will ensure that the care provided responds to community needs.

Preconception Care Needs

Preconception care focuses not only on the physical preparation for pregnancy and parenting, but also on the social, psychological, and spiritual elements. Positive and realistic attitudes about pregnancy and parenting, which are formed at an early age, are fine-tuned throughout life. Although society at large must have a general awareness of preconception health, interest in this information will be influenced by such factors as people's age and life stage, their childbearing history, and their life priorities.

Health care providers also need accurate and up-to-date information on preconception health issues. They require ongoing education through conferences, journals, and courses. They need to be informed about the most recent research evidence and its application. They should be familiar with "best practice" models for providing preconception care.

The Place of Preconception Care

When deciding the site of preconception programs, it is important to know:

- where people work and go to school;
- where they go for health information and care;
- what media they interact with; and
- how they interpret messages in the media.

Preconception care and programs should be offered through a number of venues, in various community locales, and through a variety of creative approaches. It is recommended that preconception care and education be incorporated into school curricula and the workplace, delivered through the media, and offered through community-based agencies. A variety of mechanisms can be used to share information. These include the Internet, audiovisual resources, print resources, as well as group and individual sessions.

The School

It is recommended that sexual health education be included in the curricula of all Canadian schools. Broadly based, comprehensive sexual health education programs can help young people to respect and protect their sexual health. Because the determinants for becoming sexually active and pregnant are complex, all programs need to be wide-ranging and involve several community sectors. Teachers, parents, and health care providers are all partners when planning effective programs for children and adolescents. However, innovative ideas such as peer support programs, school sexuality clinics, and student-led initiatives need to be supported (Baskerville, 1993; McKay, 1993; Health Canada, 1994).

Attention needs to be focused on younger children as well. Programs and activities that encourage realistic and age-appropriate attitudes toward healthy lifestyles, healthy relationships, preparations for parenting, and sexuality — and that also stress mutual respect — should be encouraged from kindergarten through elementary and intermediate school. It is important that the decision to have a baby be viewed, and prepared for, as part of the continuing process of "raising a family."

The Workplace

Sixty percent of Canadian women are employed in some way outside the home (Women's Bureau, Labour Canada, 1992). It is therefore recommended that the workplace be used as a location for preconception care and education. Many workplaces already involve their employees in some form of wellness program, for example, back care, fitness, heart health, nutrition, stress management, or smoking cessation. These programs are ideal opportunities to educate potential parents about issues of healthy pregnancy and parenting (National Commission to Prevent Infant Mortality, 1988).

The Media

When planning preconception programs, health care providers need to take into account the media's popular health messages. This information needs to be incorporated into program-planning discussions. Clearly, the popular media, through programming and advertising, greatly influence the decisions people make about their lives.

Television, films, and magazines can depict sexuality, pregnancy, and parenting in unrealistic and potentially dangerous ways. At times, they promote the attainment of unrealistic body shapes and sizes. As well, they advocate the use of alcohol, drugs, and tobacco as ways of gaining social acceptance and reducing stress; they downplay the risks of unprotected sex with multiple partners; they trivialize relationships; and they provide poor role models for adults, young people, and children.

Health care providers need to use the media to get *appropriate* messages out to the general public. In recent years, various organizations have sponsored media and advertising campaigns that promote healthier lifestyles and address prevention issues; for example, the dangers of drinking and driving as well as the effects of smoking and drinking on the unborn child. These efforts should be continued and expanded (Frede, 1993).

Primary Care

Throughout their lifetimes, women and men see primary care practitioners for a variety of reasons. The majority of women, however, do not specifically access a practitioner for preconception information. It is therefore recommended that preconception health counselling be provided as part of general preventive care, or during primary care visits for other health problems. Ideal opportunities for discussion with women of childbearing age would be at the time of her annual PAP test, during review of birth control or during her premarital examination (Public Health Service Expert Panel, 1989; Frede, 1993). Preconception counselling offered at such opportune moments can influence women, or women and their partners, who might otherwise not seek care until after confirmation of pregnancy (Swan and Apgar, 1995).

Community Settings

Community health workers, such as public health nurses or health care providers in community health and/or resource centres, should include preconception content in many of their community programs and group activities. Community health workers often work closely with other community leaders, including teachers and religious leaders, and are well placed to promote the inclusion of preconception information in community programs.

Preconception programs can occur anywhere that women and men gather. Because many women do not routinely access health care or information, alternative ways of providing such information and services must be found. Trained peers and professionals involved in outreach programs, one-to-one visiting programs, programs through community centres, churches, day care centres, drug stores, and grocery stores — all are potential means of reaching isolated women.

Preconception Assessment, Counselling, and Support: Specific Issues

Social Support

Social support can provide a balanced, secure environment. Such support is often lacking when people are economically disadvantaged, are newcomers to Canada, or have few friends or family within their own community. Unfortunately, pregnancy in itself may lead to social isolation.

Preconception care needs to include discussions that focus on the sources and types of social support women and men have. It should assist potential new parents to determine the support needed to raise a child and to explore possible sources of this support. Ultimately, parents will define who provides their support. In effect, the preconception period is a time to identify women and families with inadequate support and to try to link them up with appropriate community resources.

Stress

Many factors can contribute to stress in a woman's life. Over 60 percent of women with preschoolers are in the work force (Canadian Council on Social Development, 1997). Often, women still do most of the work around the home as well as the child-related activities, so they are juggling jobs, children, relationships, volunteer work, and housework. Some women are unemployed or working in low-paying jobs, and are living in poverty. Other women may be living in abusive relationships.

Stress can affect a woman in various ways. Preconception counselling can identify stressors and help men and women examine ways of dealing with these stressors before pregnancy occurs. As well, community resources and support systems can be identified and assistance given as to ways of accessing these resources before the woman actually becomes pregnant.

Quality of Relationships

Preconception counselling can focus on the quality of the relationship of the woman and her partner. As well, physical, emotional, and sexual changes that accompany pregnancy and early parenting can be identified. If a woman wants to parent alone, preconception counselling can highlight the social and community supports already in use and others available elsewhere.

Parenting alone or with a partner requires an openness about basic life values and beliefs. Preconception care and education can facilitate discussions around such issues as discipline, involvement of immediate and extended family, spirituality, child care, hopes for the future, home responsibilities, parental roles, and finances (Aikey-Keller, 1992).

Abuse and Violence

Violence in intimate relationships is commonly encountered by women of childbearing age. Research indicates that 29 percent of all women experience violence from a current or previous partner (Statistics Canada, 1993). Often, both the woman and the health care provider are equally reticent about broaching the issue of violence. Health care providers should be alert, however, to the consequences of abuse that could affect the health of the woman and her potential family. The preconception period is a critical time to identify women who are at risk for abuse and family violence. Through counselling, it may be possible to influence these factors prior to pregnancy.

Care providers need to:

- be aware of the problem of abuse;
- be able to assess and identify abuse;
- provide a safe, private, and therapeutic environment to facilitate disclosure; and
- provide support and care for the women.

Assessing and identifying abuse involves:

- identifying the risk factors and clinical clues that indicate abuse; and
- asking direct, sensitive questions. (A woman-abuse screening tool has been incorporated into the Antenatal Psychosocial Health Assessment [ALPHA] Form. This is described in more detail in Chapter 4, page 12.)

Educational material on abuse should be clearly displayed in waiting areas, examination rooms, and washrooms (perhaps the only place where a woman goes without her partner). Telephone numbers of local shelters and help lines should be clearly displayed in all areas, including washrooms.

Some health care providers, themselves, may be victims of violence. This makes it very difficult for them to broach the issue with women in their care. It is clearly important for health care providers involved in abusive relationships to seek help and support.

Female Genital Mutilation

Female genital mutilation or FGM (including female circumcision, incision, and infibulation) is a cultural practice going back 4000 years. Between 85 and 115 million women and girls have been subjected to this procedure worldwide, and each year two million or more are forced to undergo the procedure. Today, FGM is practised in 26 African countries and is increasingly being reported in Europe, Canada, Australia, and the United States (WHO 1994; Daya 1995).

Given the multicultural diversity of Canada, health care providers here may encounter women who have undergone FGM. It is crucial that these women be treated with compassion and respect. Female genital mutilation has implications for preconception counselling. It may contribute to chronic pelvic inflammatory disease. A thorough pelvic examination may be impossible. As well, women who have experienced FGM may fear intimacy, labour, and birth. These concerns need to be addressed prior to pregnancy.

Women who have experienced FGM may want to deal only with female health care providers. Whenever possible, female physicians, midwives, or nurses should be made available (Daya, 1995).

Significantly, a number of medical associations have banned the practice of female genital mutilation in Canada, including the Society of Obstetricians and Gynaecologists of Canada and the Canadian Medical Association (SOGC, 1992; Lebourdais, 1995).

Healthy Lifestyle

Preconception counselling provides the opportunity to discuss a number of issues related to a woman's lifestyle. It is the responsibility of the health care provider to:

- in partnership with the woman, assess her lifestyle;
- identify effective strategies to deal with mutually agreed upon issues; and
- provide education, support, counselling, or referral to appropriate resources within the community.

Lifestyle practices are heavily influenced by the context of a woman's life. It is therefore important to consider behaviours against this backdrop. In addition, lifestyle issues are often not sufficiently explored with women and families who appear to be healthy and apparently not at risk for difficulties.

Preconception counselling frequently focuses on the effects of certain lifestyles on the fetus, if these are continued throughout pregnancy. Equally important should be discussions of the effects of such lifestyles on a woman or man's fertility; and on the woman's ability to maintain the pregnancy, as well as her and her baby's health postpartum.

TOBACCO

In Canada, 28 percent of women over 15 years of age smoke regularly; within the 20- to 24-year age group, the smoking prevalence for women is 34 percent (Health Canada, 1995a). Tobacco smoking has been shown to be associated with infertility, low sperm counts, abnormal sperm, menstrual disorders, spontaneous abortions, ectopic pregnancies, low birth weight, prematurity, placental irregularities, infant mortality, sudden infant death syndrome (SIDS), and infant and childhood morbidity (Baird and Wilcox, 1985; Cefalo and Moos, 1988; Scher and Dix, 1990).

Women smoke for many reasons and are influenced by both external and internal factors. External factors include social and cultural norms, the regulatory framework, and the smoking behaviour of people with whom the woman lives and works. Women smoke because they are addicted, to deal with stress or boredom, to control weight, or to provide a break from a demanding life (Health Canada, 1995b). Some groups of women are more likely than others to smoke. These tend to be women living in very stressful circumstances; smoking becomes an important part of their coping mechanism (Health and Welfare Canada, 1987 and 1990). For example, women who are single, separated, or divorced, and women with less education, lower incomes, and lower-status occupations than the norm have higher rates of smoking (Health and Welfare Canada, 1994).

Women who are contemplating pregnancy and smoke are caught in a very real dilemma. On the one hand, they want to have healthy pregnancies and babies. On the other, they feel controlled by a powerful physical and psychological addiction. Health care providers have a unique opportunity at this teachable moment to guide clients through to positive solutions (Health Canada, 1995c).

In preconception counselling for a woman and her partner, it is important:

- to assess the woman's smoking status, her knowledge about the general health risks of tobacco smoking and the impact of smoking on fertility, and the impact of smoking on the fetus, should she become pregnant;
- to explore the woman's readiness to quit or cut down, and to identify strategies to help her do so; and
- to refer the woman to appropriate services.

The challenges involved in quitting need to be thoroughly considered. Reasons for smoking, the stresses in the woman's life, and her social support network — all need to be thought through. The following are possible options: group stop-smoking programs, relaxation techniques, individual counselling, hypnosis, and partner support counselling. Appendix 1 includes a number of useful resources available to health care providers.

ALCOHOL

The consumption of alcohol in Canada is pervasive and widely accepted. Alcohol use, abuse, and addiction occur in a social context and affect all levels of our society (Loney et al., 1994). Alcohol, a known teratogen, can cause birth defects by affecting the growth and proper formation of the fetus's body and brain. Fetal Alcohol Syndrome (FAS) has been recognized in Canada as one of the leading causes of preventable birth defects and developmental delay in children (Health Canada, 1996). In addition, alcohol use has been associated with an increase in female infertility, due to ovulatory factors or endometriosis (Grodstein et al., 1994).

The *Joint Statement: Prevention of Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE) in Canada* (Health Canada, 1996) concludes by saying that no definitive information can be conveyed to women regarding safe quantities of alcohol use during pregnancy. *Consequently, the prudent choice for women who are or may become pregnant is to abstain from alcohol.*

In preconception counselling, it is important to identify those women who are likely to drink heavily as well as those likely to continue drinking throughout their pregnancy. Various tools can assist in the identification of women at risk (Bush et al., 1987; Sokol et al., 1989; Bradley et al., 1998); every woman who receives preconception counselling should be asked about alcohol consumption. As well, health care providers have a responsibility to inform women, and to assist them with appropriate referrals and supportive interventions. If the woman has a partner, he or she should be included in the counselling on alcohol use; the message is to encourage the woman's choice not to drink and to cut down, or stop, the partner's drinking. It is important to develop community- and family-based addiction programs, and to refer women and families to them as appropriate.

DRUGS

Women and men may use drugs for either medical or non-medical purposes. Drugs are widely available in our society, and some — for example, like alcohol, tobacco, and caffeine — are used so commonly that they are not always considered to be drugs. Prescription drugs, such as narcotics, may be obtained from physicians, among other sources. Illicit drugs — whose purity, dose, and sometimes even the substance itself can be unknown — include narcotics, stimulants, cannabinoids, and hallucinogens (Koren, 1994).

Women of childbearing age have increased their non-medical drug use over the last two decades (Koren, 1994). Health care providers (and others) may perceive women who use drugs on a social or "recreational" basis and women who are drug-dependent to be unconcerned about health risks. However, more often than not, these women wish to spare their unborn children the risks associated with drug use.

The situations among women in the drug subculture, and the drug effects on their unborn children, cannot be extrapolated to women who use a substance once, or several times, socially. The effects of drugs on women who are drug-dependent — both on their reproductive health and their unborn children — depend on more than just their drug-taking behaviour. Critically important are the social and economic conditions of their lives and their access to appropriate health care.

Women with a long history of drug-related problems will benefit from preconception care that is integrated with drug treatment. Naturally, individual situations dictate the need for residential treatment, or outpatient individual or group counselling. Obviously, too, the ideal candidate is the woman motivated to change her drug habit. In most situations, however, care is sporadic and crisis intervention may be the only approach accepted. Nevertheless, each contact with the woman should be taken as an opportunity to engage her in ongoing care. She should be provided with information concerning the known effects of drug use on her pregnancy, and encouraged to stop all use so as to ensure the best outcome. This advice should be offered in a respectful and non-judgmental context (Koren, 1994).

Health care providers are referred to three resources in particular for detailed information concerning the effects of drugs on reproductive and preconception health: the Motherisk Program (The Hospital for Sick Children, tel: 1-877-327-4636, fax: (416) 813-7562, Internet address: http://www.motherisk.org); *Maternal-Fetal Toxicology, a Clinician's Guide* (edited by Gideon Koren); and the Canadian Centre on Substance Abuse, tel.: (613) 235-4048, fax: (613) 235-8101, Internet address: http://ccsa.ca/.

ENVIRONMENTAL CONDITIONS

Whether or not they work outside the home, all people are exposed, on a daily basis, to various chemicals and toxins in the environment. Preconception care should begin with an assessment of the workplace, home, and leisure activity environments for exposure to toxins or hazardous conditions; in addition, previous exposure should be assessed. Some cases in the workplace may require work modification or extra precautions. Protective reassignment of women at risk for poorer pregnancy outcomes due to difficult working conditions may be prudent prior to pregnancy (Levitt, 1993; CICH, 1997a, b).

Environmental hazards are numerous. Here are some of the more common ones:

- *chemicals* such as DDT;
- *metals* such as lead, copper, and zinc;
- *vinyl monomers* such as vinyl chloride;
- *anesthetic gases* found in dental offices and operating rooms; and
- *radiation,* for example, x-rays found in medical and dental offices and the electronics industries (Cefalo and Moos, 1988; Scher and Dix, 1990).

As well, for women, certain types of strenuous work and prolonged standing have been associated with preterm delivery and lower birth weights (Teitleman et al., 1990).

Health care providers are again referred to the three resources noted above for more information about environmental toxins and counselling information.

PHYSICAL ACTIVITY

Women planning to become pregnant should look carefully at their fitness levels and exercise schedules. Preconception counselling needs to focus on the woman's present level of exercise and determine what changes are needed for a successful pregnancy. Regular exercise before and during pregnancy appears to improve (or maintain) physical fitness. As yet, however, the available data are insufficient to identify important risks or benefits for either mother or baby (Kramer, 1997).

Strenuous, frequent exercise can sometimes cause problems before conception. Menstrual function can be affected and fertility problems may result (Cefalo and Moos, 1988). However, with the possible exception of oligomenorrhea and anovulation, no evidence currently exists to indicate that exercise is a cause of infertility (ACOG, 1992a). Nevertheless, women engaged in vigorous exercise programs should be made aware that hyperthermia may have teratogenic effects and that this potential risk is greatest in the early weeks of pregnancy (ACOG, 1994). As well, a woman who is actively trying to conceive should avoid hot tubs and saunas, given that pregnancy is not always obvious until fetal growth development is well under way.

Nutrition

The *Nutrition for a Healthy Pregnancy: National Guidelines for the Childbearing Years* (Health Canada, 1999) state that "maintaining or adopting healthy eating patterns before becoming pregnant can help ensure that adequate nutrients are available to support a healthy pregnancy." The preconception period is therefore an ideal opportunity for the would-be mother to improve her diet and nutrition and establish healthy eating patterns.

Before conception, however, health care providers and women should assess the following:

- the development of healthy eating practices;
- consumption of calcium, vitamin D, iron, and folic acid;
- avoidance of excessive vitamin A intakes; and
- body weight and physical activity levels, including overweight and eating disorders.

Health care providers and educators have a major role to play in educating and supporting woman in their childbearing years. Health care providers are referred to *Nutrition for a Healthy Pregnancy: National Guidelines for the Childbearing Years* (Health Canada, 1999) for more detailed information. Much of the following nutrition information is based on this document.

DEVELOPING HEALTHY EATING PRACTICES

Three important guides from Health Canada[1] — *Nutrition Recommendations. The Report of the Scientific Review Committee,* 1990; *Action Towards Healthy Eating: Canada's Guidelines for Healthy Eating and Recommended Strategies for Implementation,* 1990; and *Canada's Food Guide to Healthy Eating,* 1997 — form the basis of nationally recognized healthy eating messages. (Currently Canada and the United States are reviewing the scientific data on nutrient requirements and new nutrition recommendations will be released periodically until 2002.) Canada's Guidelines for Healthy Eating are found in Figure 3.1.

Women planning a pregnancy should be encouraged to consume a healthy diet, according to *Canada's Food Guide to Healthy Eating,* that includes foods rich in folate, calcium, iron and enhancers of non-heme iron absorption (e.g. vitamin C).

Figure 3.1 Action Towards Healthy Eating: Canada's Guidelines for Healthy Eating and Recommended Strategies for Implementation

- Enjoy a variety of foods.
- Emphasize cereals, breads, other grain products, vegetables, and fruits.
- Choose lower-fat dairy products, leaner meats, and foods prepared with little or no fat.
- Achieve and maintain a healthy body weight by enjoying regular physical activity and healthy eating.
- Limit salt, alcohol and caffeine.

Health care providers need to be aware that developing healthy eating practices is influenced by several factors: socio-economic status (especially if women have insufficient money to purchase food for themselves and their families), cultural diversity, and age.

CALCIUM AND VITAMIN D

The importance of calcium and vitamin D in the development and maintenance of bone mass points to the need to promote adequate intakes of calcium and vitamin D prior to conception. It is recommended that non-pregnant women consume 700 mg of calcium daily and 100 IU of vitamin D (assuming that a large proportion of the vitamin D requirement, estimated to be 500 IU, is being met by the vitamin D production resulting from sun exposure) (Health and Welfare Canada, 1990). Available data suggest that the average dietary calcium intake of Canadian woman of child-bearing age is lower than recommended intake (Health Canada, 1999).

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[1] Prior to 1994, Health Canada was called Health and Welfare Canada.

IRON

Canadian data on the iron intake of women of childbearing years report average dietary intake below recommended nutrient intakes (Health Canada, 1999). It is recommended that women aged 19 to 49 ingest 13 mg of iron daily. Dietary iron has two forms, heme iron and non-heme iron. The percentage of heme iron absorbed is greater than that of non-heme iron. Heme iron is found only in meat, poultry and fish. Non-heme iron is found in vegetables, fruit, grains, nuts, eggs, iron-enriched cereals and pastas. Vitamin C and meat, poultry and fish enhance non-heme iron absorption.

FOLIC ACID

Studies have shown that for women who take vitamin supplements with folic acid around the time of conception, the risk of a neural tube defect (NTD) is significantly reduced. (NTDs include spina bifida, anencephaly, and encephalocele.) NTDs affect about one in 1000 babies born in Canada (live births and stillbirths). Although 90 to 95 percent of NTDs occur in families with no such history, a family or obstetric history of an NTD places a pregnant woman at a much higher risk of having a baby with an NTD (Canadian Task Force on the Periodic Health Examination, 1994).

A randomized controlled multicentre trial has shown that preconception folic acid supplementation can decrease the risk of *recurrent* NTDs by 72 percent (Canadian Medical Association and Health Canada, 1998). Another trial demonstrated a significant reduction in *first occurrences* of NTDs when women took a multivitamin supplement including 0.8 mg of folic acid (Chitayat, 1994).

Women planning a pregnancy should consume 0.6 mg of folate daily. According to *Canada's Food Guide to Healthy Eating* (Health Canada, 1997), the careful selection of folate-rich foods will provide approximately 0.2 mg of folate; the remaining requirement for folate, 0.4 mg, must be obtained from a supplement (Canadian Task Force on the Periodic Health Examination, 1994). Women planning a pregnancy who have not previously had a pregnancy affected by an NTD should be advised to take 0.4 mg of folic acid supplementation, starting at least one month prior to becoming pregnant and continuing through the early weeks of pregnancy, and to eat a healthy diet, according to *Canada's Food Guide to Healthy Eating,* taking care to include folate-rich foods.

Women who have had a previous pregnancy affected by an NTD are at an increased risk of having another affected pregnancy. Those with a family history of NTDs, those with diabetes, or women who are taking anticonvulsant drugs may also be at increased risk. These women may require a dosage that is higher than 0.4 mg. (The reader is referred to *Nutrition for a Healthy Pregnancy: National Guidelines for the Childbearing Years,* Health Canada, 1999.)

The process of making folic acid fortification mandatory for enriched cereal grain is under way in Canada. This is a passive intervention that can increase women's intake of folic acid during the critical period of the baby's development. As yet, however, no sure link has been established between increasing the intake of folic acid via fortification of foods and a protective effect. Oral supplementation may still be necessary for women to achieve the protective effects of folic acid (Canadian Medical Association and Health Canada, 1998).

EXCESSIVE INTAKES OF VITAMIN A

Vitamin A, in excess, is teratogenic in the early weeks of pregnancy. But no one knows what constitutes the minimum teratogenic dose, although the literature reports increased risk of birth defects at intakes of 10 000 IU daily. (It is important for women to know that they may inadvertently consume excess vitamin A in a multivitamin, or in a prescription medication for acne.) The recommended intake for vitamin A, 4355 IU, is easily met through dietary means; supplementation is therefore not recommended (SOGC, 1998). If women are taking supplements in multivitamin/multimineral form, they should take only one tablet per day.

BODY WEIGHT AND PHYSICAL ACTIVITY LEVELS

A healthy body weight promotes general health, reduces the incidence of disease and is a major positive influence on pregnancy. A healthy body weight falls within a range of weights for any given height that is compatible with good health. Weight-related problems can negatively influence the mother's and unborn baby's health, and, if possible, should be addressed before pregnancy occurs. The challenge for health care providers is to help all women establish healthy attitudes and beliefs about weight and body image and adopt healthy eating and activity patterns that will help them achieve and maintain a healthy weight throughout life. Body weight is assessed using the Body Mass Index (BMI) which measures weight relative to height. See *Nutrition for a Healthy Pregnancy: National Guidelines for the Childbearing Years* (Health Canada, 1999) for details regarding the determination of BMIs. Health care providers should encourage women to follow *Canada's Physical Activity Guide to Healthy Active Living* (Health Canada and Canadian Society for Exercise Physiology, 1998).

Preconception Assessment and Counselling

A history with which to assess preconception health is an important part of a woman's (and her partner's) health care. The goal of such counselling is to provide the woman and her partner with accurate information about their health with regard to reproduction, pregnancy, and any potential risks. It is then up to them to make an informed choice. The following table may be useful for health care providers conducting health assessments of women prior to conception.

Table 3.2 Taking a Preconception History for Assessment and Counselling

GENETIC HISTORY

A thorough preconception history identifies couples who are genetically at risk. When women and their partners are informed of the risks of having a baby with birth defects or a genetic disorder prior to the pregnancy, they are then able to determine their options regarding a pregnancy (including contraception, artificial insemination, adoption, prenatal invasive testing, or chance).

Family History

- Examine the health of close family members.
- Establish, if possible, the exact disease or cause of death where appropriate (particularly in parents and siblings).
- Include assessment of *genetic diseases,* including muscular dystrophy, hemophilia, cystic fibrosis, fragile X syndrome, congenital heart disease, phenylketonuria, dwarfism, sickle cell anemia, and Tay-Sachs disease.
- Include assessment of *multifactorial congenital malformations,* such as spina bifida, anencephaly, cleft palate and cleft lip, hypospadias, and congenital heart disease.
- Include assessment of *familial diseases with a major genetic component,* such as developmental disability, premature atherosclerosis, diabetes mellitus, psychosis, epileptic disorders, hypertension, rheumatoid arthritis, deafness, and severe refractive disorders of the eye.

Ethnic History

- Establish risk for specific conditions related to ethnic origin, such as sickle cell anemia, Tay-Sachs disease, neural tube defects, beta-thalassemia, and alpha-thalassemia.

Age

- Establish risks associated with age (e.g. women under age 15 or over age 35 may carry increased biological risks). Some genetic risks are associated with age.

HEALTH HISTORY

Nutrition

- Assess the present nutritional patterns and status of the woman, her partner, and her family. Assess, for example, the practice of vegetarianism; history of eating disorders; use of supplements; use of medications; lactose intolerance; and cultural and religious practices.

Chronic Conditions

- Assess the presence of chronic conditions that can affect a woman's ability to conceive, as well as the use of medications in treatment of chronic disease and their potential effect on pregnancy.
- The following specific conditions should be considered: diabetes mellitus, anemias, thyroid disorders, gynecological disorders, hyperphenylalaninemia, asthma, sexually transmitted diseases, heart disease, hypertension, deep venous thrombosis, kidney disease, systemic lupus erythematosus, epilepsy, hemoglobinopathies, cancer, seizure disorders, tuberculosis, rheumatoid arthritis, and mental health/psychiatric disorders.

Infectious Conditions

- Identify women who are *rubella*-susceptible. If they are not actively attempting pregnancy, offer a vaccination.

- Identify and counsel women at risk for *hepatitis B (HBV)*. Routine preconception testing of all women for hepatitis B (HBV) is not currently recommended.
- Counsel women to avoid exposure to cat feces and raw and undercooked meats. Routine serologic testing for *toxoplasmosis* in the preconception period is not recommended.
- Offer women without a definite history of *chickenpox* testing of varicella titres. Vaccination of susceptible women is encouraged, if they are not actively attempting pregnancy.
- Evaluate the woman and her partner's exposure to *sexually transmitted disease*. Identifying and treating STDs before pregnancy offers the potential advantages of promoting fertility and preventing preterm labour.

  Counselling strategies include those aimed at reducing or eliminating the risk of further infection.

  - Consider doing a preconception screening for infection with *chlamydia* for all women with a history of pelvic inflammatory disease, multiple sex partners, or STD. Chlamydial infections increase the risk of pelvic inflammatory disease, fertility problems, intrauterine fetal death, low birth weight, and postpartum endometriosis. Active maternal chlamydial infection has a transmission rate of 60 percent.
  - Evaluate the woman and her partner for ongoing risk of *HIV infection*. Fetal transmission of the HIV virus occurs in approximately 30 percent of cases and prenatal treatment is effective in reducing the risk. All women should be offered HIV testing in the preconception period.
  - Examine all women with a history of pelvic inflammatory disease, multiple sex partners, or STD for *gonorrhea*. Opthalmia neonatorum is a major consequence of maternal gonorrhea. If gonorrhea is suspected, a culture should be done before a pregnancy is considered and the appropriate treatment given.
  - Evaluate women for signs of *maternal and neonatal syphilis*. Although disease rates are rising, prompt and adequate treatment can prevent congenital syphilis.

Reproductive History

- Collect information about menstrual, contraceptive, and sexual histories; infertility; abnormal Pap smears; or in utero exposure to diethylstilbestrol.
- Discuss *past obstetric history*, including early miscarriages; number of pregnancies; type of birth; length of labour; and specific complications, such as premature labour or delivery, gestational diabetes, pregnancy-induced hypertension, and postpartum depression.
- Discuss *menstrual difficulties*, specifically excessive cyclic bleeding, amenorrhea, and oligomenorrhea.
- Discuss gynecological disease, such as endometriosis or pelvic inflammatory disease.

Psychosocial History

- Assess *interpersonal relationships and social support systems*, including such factors as support of family and friends, employment, socio-economic issues, and violence and abuse.

Lifestyle Assessment

- Assess *lifestyle issues*, including such factors as nutrition; physical activity; prescription and over-the-counter drug use; other substance use; and environmental exposures, current and past.

PRESENT HEALTH STATUS

Physical Examination

- Conduct an initial prenatal examination. Include vital signs (blood pressure, pulse, height, and weight); general physical examination; breast examination; pelvic examination; and clinical pelvimetry.

Laboratory Evaluation

- Have an evaluation done of the woman's hemogloblin or hematocrit, Rh factor, urine dipstick for protein and glucose, blood type, Pap smear, and gonococcal and chlamydia culture (as recommended in clinical practice guidelines). Syphilis, hepatitis B, HIV (if testing is offered). Assess rubella and varicella titres (if necessary).

Sources: Levitt, 1993; Cefalo and Moos, 1995; Swan and Apgar, 1995; Society of Obstetricians and Gynaecologists of Canada, 1998.

Genetic Counselling

Genetic counselling services should be made available to women and their partners who suspect that their future children may be at risk for inheriting a disorder, or to couples following the birth of a baby with a birth defect. Throughout Canada, there are counselling centres where people can gather the information necessary to determine a probability estimate for genetic problems. These centres also provide extensive counselling. Health care providers should contact their regional centres for detailed information.

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APPENDIX 1

Tobacco Reduction Resources

Guide Your Patients to a Smoke-Free Future
A program of the Canadian Council for Tobacco Control, endorsed by the College of Family Physicians of Canada and the Canadian Medical Association
170 Laurier Avenue West
Suite 1000
Ottawa, Ontario K1P 5V5
Tel.: (613) 567-3050
Fax: (613) 567-2730
www.cctc.ca

Catching Our Breath
Women's Health Clinic
3rd Floor – 419 Graham Avenue
Winnipeg, Manitoba R3C OM3
Fax: (204) 943-3844

Tobacco-Free Booklets for Prenatal and Postpartum Providers
Health Canada Publications
Ottawa, Ontario K1A 0K9
Tel.: (613) 954-5995
Fax: (613) 941-5366
www.hc-sc.gc.ca

Approaching Smoking in Pregnancy: A Guide for Health Professionals
The College of Family Physicians of Canada
2630 Skymark Avenue
Mississauga, Ontario L4W 5A4
Tel.: (905) 629-0900
Fax: (905) 629-0893

Yes, I Quit! / Oui j'arrête!
Habitudes de vie / Santé du cœur
Direction de la santé publique de Montréal-Centre
1301 Sherbrooke Street East
Montréal, Québec H2L 1M3
Tel.: (514) 528-2400
Fax: (514) 528-2512

Stop Smoking: A Program for Women
Marketing Department
Addiction Research Foundation
33 Russell Street
Toronto, Ontario M5S 2S1
Tel.: 1-800-661-1111
Fax: (416) 593-4694
www.arf.org

Taking Control: An Action Handbook on Women and Tobacco
Canadian Council on Smoking and Health
170 Laurier Avenue West
Suite 1000
Ottawa, Ontario K1P 5V5
Tel.: (613) 567-3050
Fax: (613) 567-2730

— CHAPTER 4 —

Care During Pregnancy

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Introduction

The overall goal of providing prenatal care is to improve and maintain the health and well-being of mothers, babies, and families. This involves ongoing assessment and monitoring of the health status of the women and their unborn babies. In keeping with the values of family-centred care, it is recommended that prenatal care be provided in an environment in which:

- pregnancy is considered a state of health;
- women and families are valued and respected;
- the relationship between women and health care providers is mutually consultative and interactive;
- the diversity of women's needs is recognized, as well as the variety of personal and cultural meanings that women and families bring to pregnancy; and
- care providers facilitate the process of informed decision making.

This chapter provides a comprehensive framework for the provision of prenatal care and services. These approaches should be adapted according to local and regional needs and the needs of individual women and families. Not all aspects of care described in this chapter are appropriate or necessary in all situations.

Issues in the Organization and Provision of Prenatal Care

Many studies have shown that women who receive prenatal care early and regularly have a better outcome than those who do not. Although the tendency is to equate regular prenatal care with a good outcome, it must be recognized that those accessing prenatal care tend to be more financially secure than the average; often, they are of middle or higher socio-economic status and have well-organized support systems. Many determinants influence the health of pregnant women and their unborn babies. These include the socio-economic conditions, social policies, financial and human resources, and health care organization of a community (Enkin et al., 1995). In addition, communities vary according to geography, climate, living conditions, and population characteristics. Community- or population-based approaches to health care delivery are therefore necessary if equitable access to health is to be achieved.

Women have many reasons for not accessing pregnancy care. Often, these are linked to socio-economic disadvantage, culture, language, age, and geography. Services need to be organized in such a way that these conditions do not act as barriers to care.

Providers

Providing prenatal care requires the cooperation and coordination of many different health care providers and services. Table 4.1 describes some of the personnel, agencies, and services to be considered in planning a comprehensive system.

Table 4.1 Health Care Providers, Agencies, and Services for Prenatal Care

Health Care Providers

- primary caregivers (physicians, midwives, nurse practitioners)
- consultant specialists
- community health nurses
- regional or outpost nurses
- nutritionists/dieticians
- prenatal educators
- social workers
- mental health workers
- family home visitors
- physiotherapists
- doulas/labour companions
- home support workers

Agencies/Services

- health units/community health centres
- social service agencies
- in-hospital services
- labour support groups
- birth centre services
- community-based services
- self-help groups
- genetic services
- laboratory services
- ultrasound units
- emergency response or transport services
- fitness and exercise programs
- smoking cessation programs
- preparation for breastfeeding services (e.g. La Leche League, lactation consultants)
- addiction agencies (alcohol, drugs)
- services for pregnant teenagers
- adoption agencies and counselling services

CHOICE OF PRENATAL HEALTH CARE PROVIDERS

Some communities have a wide choice of health care providers offering prenatal care; others do not. The availability of such caregivers depends on the size of the community, as well as its geographic location and resources.

Regardless of the range of choice, those undertaking prenatal care for women and families must hold to the fundamental principles of providing family-centred maternity and newborn care: informed choice, continuity of care, evidence-based care, and respect for individuality.

In addition to health care providers and other service providers, a woman's support system may include her partner, her immediate and extended family, her friends, her community and its members, her labour companion/doula, her spiritual advisor, and any other individuals that she feels are necessary to her physical, emotional, and social well-being. Generally, the woman chooses her personal support system. It is important for health care providers to find ways to accommodate the members of the woman's support system. They should be made to feel welcome, with their needs and concerns during care acknowledged.

Continuity of Care

During pregnancy and childbirth, every effort should be made to provide women with care from the same health care provider, or from a familiar group. Women have repeatedly stressed the importance of such continuity of care. Evidence indicates that women receiving such care experience many positive outcomes, including less likelihood of prenatal admissions to hospital, greater likelihood of attendance at prenatal education programs, less likelihood of using pharmacological methods of pain relief during labour, less likelihood of their newborns requiring resuscitation, and greater likelihood of satisfaction with their prenatal, labour, birth, and postpartum care (Hodnett, 1997).

Groups are most effective when there is a shared philosophy and approach to caring for women. As well, continuity of care and teaching is enhanced by documentation systems that provide effective communication between providers. Such documentation decreases the possibility of repetition and gaps in care.

Prenatal Visits

The frequency of prenatal visits should be determined by the physical and psychosocial needs of the woman and her unborn baby. To date, no data have indicated the optimal number and schedule of visits. Frequency of visits has been based on arbitrary decisions and tradition, rather than evidence. Further research is needed to answer questions about the number and timing of visits (McDuffie et al., 1996; Sikorski et al., 1996; Villar and Khan-Neelofur, 1998).[1]

It is recommended that the guidelines of the Society of Obstetricians and Gynaecologists of Canada (SOGC) be followed. They state: "After the initial prenatal visit, women with no identifiable risk should be seen every 4-6 weeks up to 30 weeks' gestation, for assessment. After 30 weeks, visits should occur every 2-3 weeks and, after 36 weeks, every 1-2 weeks until delivery. The assessments at these times should focus on different issues appropriate to the gestational age" (SOGC, 1998a).

Initial Care Visits

A number of essential components are included in initial prenatal care visits. They include developing an understanding between the woman/family and the health care provider concerning the roles, responsibilities, and organization of services; establishing a prenatal record; taking a history; doing a general physical examination; conducting the requisite screening, diagnostic tests, and laboratory investigations; assessing and counselling; and educating about community resources and care options.

Prenatal Record

It is recommended that every province and territory provide a standardized care record for prenatal, birth, and newborn care, and that the country strive to establish a Canada-wide record. Such a record would provide the necessary documentation for clinical care. It could also serve as a data collection instrument, gathering useful aggregate information for providers, consumers, health care planners, and researchers.

It is recommended that women have a copy of their prenatal record with the essential information. There is evidence to support this practice. Women who carry a copy of their prenatal record report an increased feeling of control during pregnancy. Effective communication between women and health care providers is thereby enhanced and a partnership encouraged. Continuity of care is enhanced as well (Hodnett, 1995; Webster et al., 1996).

It is important that women take this record with them to their birth site, or if they see a different health care provider. (If women cannot carry such a record, health care providers should ensure that copies of the essential information are sent to the planned place of birth.)

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[1] The World Health Organization is currently examining this issue via a large trial.

A woman-held record can take a variety of forms. It should document the essential, basic health-assessment information. It should provide women with the opportunity to record their plans for pregnancy and birth as well as any questions or concerns they may have about their pregnancy; it should also allow the care providers to record information. It can thus become a diary for each woman's pregnancy and birth. (Appendix 1 presents an example of a woman-held record.)

History Taking

A complete prenatal history includes not only the woman's physical health history, her family history, and her history of previous pregnancies and reproductive concerns, but also information about her social and emotional situation. It is important that the prenatal history be taken in a comfortable environment, in a relaxed manner. The elements of a prenatal history are outlined in Table 4.2. Most provinces and territories have standard prenatal forms that include this information. However, if forms are being redesigned, the list in Table 4.2 should be consulted.

Physical Examination

A physical examination should be completed according to the guidelines presented in *Healthy Beginnings: Guidelines for Care During Pregnancy and Childbirth* (SOGC, 1998a). This should include a breast assessment in preparation for breastfeeding (see Chapter 7).

Determination of Risk

An initial and ongoing assessment is needed of the health status of both the mother and unborn baby; their potential risk of developing problems should be assessed as well. Such an assessment facilitates the provision of appropriate care — during pregnancy and birth — with the appropriate health care provider, and in the appropriate place. Such an assessment also serves as the basis for referral within a regionalized system. As well, it provides an opportunity to identify the variety of factors that affect the health of the mother and her unborn baby and the outcomes of childbirth.

The evidence is insufficient to recommend general use of risk-scoring and grading systems of classification that assign mild, moderate, and high risk. Their predictability tends to be poor, because of such factors as tool validity and differences in approach, use, and interpretation (Hall, 1994; Hutchison and Milner, 1994; Enkin et al., 1995).

The nuances of pregnancy health assessment cannot be contained in a simple risk-scoring system. They require a skilled professional — one aware of the woman's health status, of the local and regional health care resources, and of the likelihood of complications and risks for poor outcomes.

Table 4.2 Elements of a Prenatal History

- Family history (of the woman and father of the baby)
- Genetic history: indications for discussion, counselling, and further testing (screening programs, maternal age, paternal age, family history or previous child with genetic abnormality, ethnic background)
- Past medical and surgical history, with attention to conditions that might influence pregnancy and breastfeeding, or might be adversely affected by pregnancy
- Menstrual history: to determine conception date; gestational age; and history, or recent use, of birth control
- Sexual health history
- Previous obstetrical and gynecological history: to assess risk, and potential recurrence, of conditions that may affect this pregnancy
- History of present pregnancy, and feelings and reactions of the woman and her family toward the pregnancy
- Current medication history (prescribed and over-the-counter medication)
- History of allergies and symptoms to drugs, foods, and substances (e.g. latex)
- History of past and current exposure to environmental contaminants
- Dietary history and nutritional status
- Activity pattern: work, rest, recreation
- Psychosocial history: to explore issues of lifestyle (smoking, alcohol consumption, and other drug use), interpersonal relationships, levels of stress/anxiety, adequacy of personal/family supports, financial status and work/living arrangements (early in pregnancy, see ALPHA Form)
- History of physical, sexual, or emotional abuse
- Expectations for pregnancy, birth, and parenting
- Past experience with labour, birth, postpartum, and breastfeeding
- Traditions related to birth and postpartum practices arising from the woman's religious or ethnic background
- Any other factors that the woman believes are relevant to her care and that of her baby and family

Screening, Tests, and Laboratory Investigations

Health care providers are referred to *Healthy Beginnings: Guidelines for Care During Pregnancy and Childbirth* (SOGC, 1998a) for the recommended prenatal diagnostic laboratory investigations and screening procedures. These guidelines state that the following tests are recommended once pregnancy is confirmed: hemoglobin level, blood group and antibody screen, rubella titre, hepatitis B surface antigen assay, and VDRL (Venereal Disease Research Laboratory) (SOGC, 1998a).

The Society of Obstetricians and Gynaecologists of Canada suggests that other investigations are appropriate in certain circumstances.

SCREENING

The conditions that justify the establishment of a screening procedure are:

- The disease in question is a serious health problem.
- The disease has a presymptomatic phase, during which treatment can change the course of the disease more successfully than during the symptomatic phase.
- The screening procedure and the ensuing treatment are acceptable to the public.
- The screening procedure has acceptable sensitivity and specificity.
- The screening procedure and ensuing treatment are cost-effective (Carroll, 1993).

In all cases where screening is undertaken, the following guidelines should be observed:

- provision of appropriate education to parents and health care providers;
- access to accurate and prompt laboratory testing;
- access to competent counselling and support services;
- access to specialist consultants as necessary;
- access to appropriate treatment (Carroll, 1994); and
- effective and timely transmission of results.

Several areas of screening during pregnancy remain controversial. These areas are chlamydia, gestational diabetes, group B streptococcus, ultrasound, HIV/AIDS, and maternal serum marker screening. Clear-cut recommendations are not possible in these situations. Decisions can be made only after all the available evidence is considered. These areas are discussed in detail in Appendix 2.

Psychosocial Assessment

Although prenatal care has traditionally focused almost exclusively on detection of medical and obstetrical problems, psychosocial issues have recently been recognized as important determinants of health for pregnant women and their newborns (National Health and Welfare, 1987; Rosen, 1989; Culpepper and Jack, 1993; Enkin et al., 1995).

Assessment of psychosocial risk during prenatal care, which can be done efficiently, permits health care providers to tailor interventions to individual women. Research shows that appropriate interventions can improve psychosocial health (Holden et al., 1989; Oakley, 1992; MacMillan, et al., 1993; Midmer et al., 1995). Without systematic enquiry, however, many problems will go undetected. Therefore, it is recommended that the assessment of psychosocial health be incorporated into routine prenatal care.

The ALPHA (Antenatal Psychosocial Health Assessment) Form was created to facilitate systematic gathering of this information. (See Appendix 3.) Based on a systematic review (Wilson et al., 1996), a number of antenatal risk factors were chosen for screening; these factors demonstrated association with poor postpartum family outcomes of woman abuse, child abuse, postpartum depression, marital (couple) dysfunction, and increased physical illness. The ALPHA tool is recommended for health care providers trying to identify pertinent, new information about women and their families — information needed when women must make decisions about life situations or seek assistance for psychosocial problems. Women are comfortable with this form of enquiry and providers have noted an increased rapport with women after this assessment (Midmer et al., 1996; Reid et al., 1998). Recommendations for using this form are summarized in Table 4.3.

ELEMENTS OF PSYCHOSOCIAL ASSESSMENT AND COUNSELLING

Adjustment to Pregnancy. When a woman becomes pregnant, she must cope with physical and psychological changes while preparing for birth and mothering. Assessment of the situation includes evaluating the pregnant woman's perceptions of the complexities associated with mothering, evaluating her attachment to her unborn baby, and evaluating the acceptance of her child by her family and support network.

Table 4.3 Recommendations for Using the ALPHA Form[2]

1. The ALPHA Form is one particular systematic method of assessing the psychosocial aspects of a woman's life. The presence of a risk factor does not imply causality, but rather the possibility of an increased association with the outcome(s). The form should be used to identify problems and, with the woman's participation, to assist her in deciding if and how they should be dealt with. This may mean increased monitoring, support or use of additional resources or interventions, and referral to other community services during the postpartum period.
2. The requisite information may be gathered in one interview, or over a series of visits.[3] The second trimester, during the 20- to 30-week period, is a favourable time for the assessment to take place; more time is usually available at that point and an increased rapport has been developed with the caregiver.
3. Information must remain confidential. With the woman's consent, the caregiver can share the information with appropriate professional(s) during the prenatal period (e.g. social worker), the intrapartum period (labour and delivery nurses), or the postpartum period (family physician, pediatrician).
4. Care must be taken when cross-cultural communication is involved. Sensitivity to cultural values must be maintained. Caregivers working with people from other cultures may have to determine what is appropriate and acceptable within those cultures.
5. If possible, women should be interviewed alone at least once during the prenatal period so they can disclose sensitive issues regarding partners or family members who may be accompanying them.
6. Caregivers should compile a list of resources available in their own communities to deal with concerns arising from the ALPHA assessment. Concerns will vary according to the setting and culture.

Adapted from: Midmer et al., *A reference guide for providers: The ALPHA Form,* 1996.

Support for the Pregnant Woman in Pregnancy. A woman needs social support during pregnancy. Social support reflects an individual's sense of belonging and safety with respect to a caring partner, family, or community. Insufficient social support during pregnancy is characterized by isolation; lack of help when dealing with daily tasks, stressful events, or crises; and lack of support from a spouse, close friend, or family member. Lack of social support has been associated with abuse of the child and/or woman, and postpartum depression (Midmer et al., 1996).

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[2] *A Reference Guide for Providers: The ALPHA Form* (Midmer et al., 1996) is available from the Department of Family and Community Medicine, University of Toronto, 8th Floor, 620 University Avenue, Toronto, ON M5G 2C1.

[3] A self-administered version of the form has been developed and is now being tested in a pilot study. Providers would be expected to review this form with the woman and to plan follow-up or interventions.

To assess social support, the ALPHA guide suggests asking:

- How does your partner and/or family feel about your pregnancy?
- What support do you get from your family, friends, and partner?
- Who will be helping you when you go home with the baby?
- What family and/or friends do you have in town?
- Who do you turn to when you have a problem or when you've had a bad day?

Stress and Anxiety in Pregnancy. Some psychological stress during pregnancy is inevitable since it is a time of change. Certain pregnant women may be more stressed than others, especially if social circumstances are not ideal, if there are complications associated with the pregnancy and/or the unborn baby, if hospitalization is required, if the pregnancy was unplanned, or if the woman's family circumstances change (e.g. a marriage breakdown) (Midmer et al., 1996).

To assess stressful life events, the ALPHA guide suggests asking:

- What major life changes have you experienced this year? For example, has there been a job loss, financial problems, illness or death of a loved one, a work or household-related move?
- What changes are you planning during this pregnancy?
- How do you cope with stress in your life? How does your partner cope?

Support for Fathers. In two-parent, heterosexual families, it is important for expectant fathers to be part of prenatal care. Typically, as the reality of a child unfolds during pregnancy, fathers feel a sense of evolving responsibility toward their family and the unborn baby (Jordan, 1990). Men have specific psychological, emotional, and physical needs connected with their preparedness for fatherhood and their successful adaptation to the transition to parenthood (Mason and Elwood, 1995). As they work through incorporating their paternal role into their identity, they begin to enact parental behaviours (Jordan, 1990).

Pregnancy may be an ideal time for the expectant father to become aware of his own health and lifestyle habits, and their potential effects on his new family. He has the opportunity to modify his own lifestyle habits to support choices that his partner makes — both for her own health and that of the unborn baby (Polomeno, 1997; 1998).

Parenthood is a transition that implies a change in roles and status for *all* family members. Some stress and anxiety during this transition are considered normal. Fathers and mothers who come to the parenting role with a range of personal and coping resources have the potential for good mental and physical health. Social support and communication within their relationship are key buffers of stress. The mutual support they offer each other during pregnancy will help them to deal with the major changes imposed by the pregnancy on their relationship (Schroeder-Zwelling, 1988).

Couple relationships. To assess the couple's relationship, the ALPHA guide suggests asking:

- How will your partner be involved in looking after the baby?
- How do you share tasks at home? How do you feel about this?
- Has your relationship changed since pregnancy? What will it be like after the baby?
- Do you have any concerns about your relationship with your partner?
- In your culture, what usually happens in a couple relationship once the baby is born?

Sexuality in Pregnancy. Pregnancy, labour, and birth are all aspects of a woman's sexuality. Although a wide range of physiological sexual responses exist during pregnancy, sexual interest, frequency, and satisfaction often change for both men and women. Sexual relationships during pregnancy depend on many factors, including the quality of the relationship in all areas, sexual values and attitudes, religious beliefs, general health, specific pregnancy-related health concerns, and the quality of the couple's relationship (Phillips, 1996).

Pregnant women and their partners should have a basic understanding of sexuality and impact of pregnancy on sexuality. They need to have information about the following: the physical and psychological changes of pregnancy and how these can change physical and emotional sexual responses; the different ways of pleasuring; and the importance of communicating changes, needs, and desires. Certain sexual restrictions during pregnancy may be necessary, for example, if vaginal bleeding, premature rupture of the membranes, or premature labour occurs.

Health care providers need to understand the range of attitudes and feelings that women and their partners may have in intimate relationships during pregnancy. They also must be aware of their own personal attitudes, values, and biases and how these affect their assessment of women's sexual health. Health care providers are encouraged to actively explore and understand their own personal attitudes and values about sex and sexuality. Health care providers need skills in sexual health assessment. (See MacLaren, 1995, for a full discussion of sexual health assessment.) As well, they need to recognize their limitations regarding sexual health assessment and feel confident in referring to others, as appropriate.

Violence in Pregnancy. The incidence of violence in pregnancy runs between 4 and 17 percent (SOGC, 1996). Pregnancy is a time of increased risk for abuse because of ambivalent feelings about the pregnancy, increased vulnerability of the woman, mounting economic pressures, and decreased sexual availability (Stewart and Cecutti, 1993).

There may be reticence on the part of the woman, the care provider, or both, to broach the issue of violence. However, health care providers need to be alert to the possible consequences stemming from the abuse, which could affect the health of the woman and her unborn baby.

Care providers need to:

- be aware of the problem of abuse;
- be able to assess and identify abuse;
- provide a safe, private, and therapeutic environment to facilitate disclosure; and
- provide support and care for the woman.

Assessing and identifying abuse involves:

- being able to identify the risk factors and clinical clues that indicate abuse (see Table 4.4); and
- being able to ask direct, sensitive questions. An abuse-screening tool for women has been incorporated into the ALPHA Form (Brown et al., 1996). The questions are summarized in Table 4.5. The SOGC Policy Statement on Violence Against Women also includes relevant questions (SOGC, 1996).

Educational material on abuse should be clearly displayed in waiting areas, examination rooms, and washrooms. Telephone numbers of local shelters and help lines should be clearly displayed in all areas, especially in washrooms.

Following disclosure, health care providers should state clearly that physical, sexual, and psychological abuse are unacceptable behaviours, and that the woman is in no way to blame for the situation. The woman should be reassured about confidentiality. As well as enabling her to make decisions, health care providers should acknowledge and support her efforts to take charge of her life. The health care providers should also indicate that they will support the woman whether she decides to stay with, or leave, her partner. They should ask about the woman's perception of her own safety, and whether she has an exit or safety plan in case of increased danger. She should be helped to formulate plans for this eventuality. Community and family support systems should be explored, as well as the woman's knowledge of community support and resources. Specific information should be transmitted regarding available community resources, with addresses and telephone numbers (Midmer et al., 1996; SOGC, 1996; Ferris et al., 1997; Martin and Younger-Lewis, 1997).

Table 4.4 When to Suspect Physical Abuse

Physical abuse should be suspected when women make multiple visits to care providers' offices with problems such as:

- headaches, insomnia
- choking sensations, hyperventilation
- gastrointestinal symptoms, chronic pain
- shyness, fear, embarrassment
- evasiveness, passivity
- frequent crying
- a male partner who often accompanies her but who is reluctant to leave
- drug and alcohol abuse or overdose
- attempts at self-harm or suicide
- depression
- sexual problems
- injuries not consistent with stated cause

Adapted from: Society of Obstetricians and Gynaecologists of Canada, *Policy Statement: Violence Against Women*, 1996.

Table 4.5 How to Ask About Abuse During Pregnancy

- In general, how would you describe your relationship with your partner?
- How do you and your partner solve arguments?
- Do you ever feel frightened by what your partner says or does?
- Have you ever been hit, pushed, shoved, or slapped by your partner?
- Has your partner ever humiliated you or psychologically abused you in other ways?
- Have you ever been forced to have sex against your will?
- In your culture, what do people think about a man who is violent with a woman?

Source: Brown et al., 1996; Midmer et al., *The ALPHA Form*, 1996.

Tobacco Use. In Canada, maternal smoking is a major risk factor for low birth weight or premature babies, as well as perinatal mortality. Women smoke for many reasons and are influenced by both external and internal factors. External factors include social and cultural norms, laws, and the smoking behaviour of people with whom the woman lives and works. Some women have very stressful lives and smoking can become an important mechanism for coping (Health and Welfare Canada, 1987; 1990). (See Chapter 3, page 13, section on Tobacco.)

Women turn to a variety of support systems and sources of information as they make their choice to quit or reduce smoking. For example, their friends, families, and partners may be supportive and influence their decisions. They also turn to their health care providers (Levitt et al., 1997). The most effective way of quitting or reducing smoking, however, appears to be self-help behavioural (how to) strategies (Lumley and Astbury, 1989). Health care providers have many useful resources available with which to approach the issue of tobacco use with pregnant women. Examples are found in Appendix 1 of Chapter 3.

Alcohol. The consumption of alcohol in Canada is pervasive and widely accepted. Alcohol use, abuse, and addiction occur in a social context and affect all levels of our society (Loney et al., 1994). Fetal Alcohol Syndrome (FAS) is recognized in Canada as one of the leading causes of preventable birth defects and developmental delay in children. The *Joint Statement: Prevention of Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE) in Canada* (Health Canada, 1996) concludes by saying that no definitive statement can be made regarding a safe quantity of alcohol use during pregnancy. *Consequently, the prudent choice for women who are, or may become, pregnant is to abstain from alcohol.*

Various tools are on the market to assist in the identification of women at risk. (See Chapter 3.) The ALPHA Form includes questions about alcohol use. Every pregnant woman should be asked about alcohol consumption. In effect, health professionals have a responsibility to inform women at risk, and to assist with appropriate referrals and supportive interventions. If the woman has a partner, he or she should be included in the counselling on alcohol use. Counselling should emphasize the importance of supporting the woman's choice not to drink.

Other Drugs. Drugs of any kind may affect both the mother and the unborn baby. Such substances include over-the-counter drugs (e.g. aspirin, cold remedies, antihistamines, antinauseants, codeine, large doses of vitamins), prescription medication, herbal and plant products, caffeine, marijuana, narcotics (e.g. methadone, heroin, cocaine), and solvents.

It is recommended that questions be asked regarding drug use during the prenatal assessment. Referral to a drug treatment program for further assistance may be necessary. It is important to note that maternal withdrawal and detoxication from some drugs involves risk of fetal withdrawal (SOGC, 1998a). Health care providers are referred to the following resources for detailed information on the effects of drugs on pregnancy and the unborn baby, as well as counselling information: the Motherisk Program (The Hospital for Sick Children, tel: 1-877-327-4636, fax: (416) 813-7562, Internet address: http://www.motherisk.org); *Maternal-Fetal Toxicology, a Clinician's Guide* (Koren, 1994); and the Canadian Centre on Substance Abuse, tel.: (613) 235-4048, fax: (613) 235-8101, Internet address: http://ccsa.ca/.

In recent years, the availability of herbal preparations has kept pace with the accelerating interest in the use of herbal remedies. Unlike pharmaceuticals, herbal products are not subject to regulations, and information as to their safety during pregnancy may be hard to find. Health care providers seeking information are referred to the safety of herbal medications in the pregnancy section of *Drug Information Perspectives* (Lepik, 1996) and to *Maternal-Fetal Toxicology: A Clinician's Guide* (Koren, 1994).

Physical Activity. Regular exercise during pregnancy appears to improve (or maintain) physical fitness. Unfortunately, the important risks or benefits for the mother and baby are insufficiently covered by the data available (Kramer, 1997).

Certain contraindications to vigorous exercise in pregnancy have nonetheless been identified (ACOG, 1994):

- a history of three or more miscarriages
- a history of premature rupture of the membranes
- a history of premature labour
- an incompetent cervix
- a history of placenta previa
- a history of intrauterine growth restriction.

Women engaged in vigorous exercise programs should know that hyperthermia may have teratogenic effects. They should be aware that this potential risk is greatest in the earliest weeks of pregnancy (ACOG, 1994).

Working Conditions and Environmental Exposure. Large numbers of expectant mothers continue to work outside the home. The question of whether or not a mother's work affects the unborn baby depends on the type of work, hours of work, levels of physical and emotional stress, and the mother's individual health status. Strenuous extended work may be associated with a decreased birth weight, prematurity, and miscarriages. Women's working conditions should therefore be assessed early in pregnancy to determine the type of work involved.

It is recommended that when assessing the woman's working conditions and making recommendations for modification, health care providers use the guidelines described in the document *Healthy Beginnings: Guidelines for Care During Pregnancy and Childbirth* (SOGC, 1998a).

Whether a person's working environment is in or outside the home, everyone is exposed on a daily basis to various chemicals and toxins. It is important to assess the woman's current and previous exposure to environmental toxins (CICH, 1997a;b). (See Chapter 3 for more discussion on this topic.)

Nutrition

DEVELOPING HEALTHY EATING PRACTICES

Canada's Food Guide to Healthy Eating (Health Canada, 1997) recommends that pregnant women eat five to twelve servings of grain products, five to ten servings of vegetables and fruit, three to four servings of milk products and two to three servings of meat and/or alternatives per day. Please note that the following discussion of nutrition may be supplemented by referring to *Nutrition for a Healthy Pregnancy: National Guidelines for the Childbearing Years* (Health Canada, 1999). As well, nutrition is discussed in Chapter 3 of this document.

NUTRIENTS OF SPECIAL CONCERN DURING PREGNANCY

Certain specific nutrients are of particular concern during pregnancy. Health care providers should ensure that they assess, with the woman, the adequacy of her diet with regard to these nutrients. The nutrients are outlined in Table 4.6. More detailed information is found in Appendix 4.

Table 4.6 Nutrients of Special Concern During Pregnancy

Calcium	The recommended daily intake is between 1200 and 1500 mg per day depending on age. Available data suggest that the average dietary calcium intake of Canadian women of childbearing age is lower than the recommended intake.
Vitamin D	The recommended daily intake is 5.0 μg or 200 IU per day. This was established assuming that a large portion of the nutrient required daily would be derived from exposure to sunlight.
Iron	The recommended daily intake is 13 mg in the first trimester, 18 mg in the second trimester, and 23 mg in the third trimester. Iron status should be assessed early and throughout pregnancy.
Folic acid	Women should be advised to take 0.4 mg of folic acid supplementation, starting at least one month prior to becoming pregnant and continuing through the early weeks of pregnancy, and to eat a healthy diet, according to *Canada's Food Guide to Healthy Eating* (Health Canada, 1997), taking care to include folate-rich foods.
Vitamins/Mineral supplementation	Women on healthy diets may not need supplements. Any supplement should complement the woman's daily intake.
Essential fatty acids	The recommended nutrient intake for essential fatty acids (EFAs) increases during pregnancy so pregnant women should be encouraged to increase their intake of EFAs.

Source: Health Canada, *Nutrition for a healthy pregnancy: national guidelines for the childbearing years*, 1999.

WEIGHT GAIN IN PREGNANCY

The mother's pre-pregnancy weight-for-height, rather than her weight gain per se, is the most significant and predictive factor for the growth of her unborn baby. Although gestational weight gain is not as strongly linked to growth of the unborn baby and birth weight as previously thought, measuring weight gain is an easy and convenient way to monitor the progress of pregnancy, particularly in the second and third trimester.

The appropriate weight gain varies from woman to woman and is based on the pre-pregnancy Body Mass Index (BMI), which reflects the mother's weight-to-height ratio. (For detailed information on calculating BMI, see *Nutrition for a Healthy Pregnancy: National Guidelines for the Childbearing Years*, Health Canada, 1999.) In general, optimal growth of the unborn baby occurs if women with a low pre-pregnancy BMI (< 20) gain more weight and women with a high pre-pregnancy BMI (> 27) gain less weight than women who enter pregnancy with a healthy body weight (BMI between 20 and 25).

Recent research has brought into question previously accepted upper and lower limits of weight gain during pregnancy (Feig and Naylor, 1998). Health care providers are referred to the most recent clinical practice guidelines now that weight-gain recommendations are being re-examined in light of this evidence.

There are several categories of women who may be nutritionally at increased risk of having low birth weight babies. These are adolescents, women with eating disorders, immigrant women who are undernourished and may therefore suffer from delayed growth, and women who are socio-economically disadvantaged.

As important as gestational weight gain is as a monitoring tool, practitioners report that an overemphasis on weight gain and weighing is counterproductive.

CREATIVE STRATEGIES FOR PRENATAL NUTRITION

Creative strategies are needed to assist communities in developing or improving comprehensive prenatal nutrition programs for pregnant women. Canada has many such programs under way. They address such issues as food supplementation; nutrition assessment and counselling; social support; interagency referral; and education on lifestyle issues such as smoking, substance abuse, family violence, and stress. The programs are often designed to help organizations and community groups address the needs of pregnant Aboriginal women; pregnant women living in poverty; pregnant teens; and pregnant women who are geographically, socially, or culturally isolated. (See, for example, *The Canada Prenatal Nutrition Program: Guide for Applicants*, Health Canada, 1994c.)

Continuing Care

Pregnancy, Birth, and Postpartum Planning

Through consultation and collaboration, women and health care providers can design plans for pregnancy, birth, and the postpartum period. Issues for discussion would include prenatal testing, inclusion of father or partner during birth, comfort or pain management, medical interventions, place of birth, concerns and fears, newborn care, possible emergencies, infant feeding, postpartum family support and community resources, and other issues of the woman's choosing. (See Chapter 5 for details on planning for birth.)

Continuing Assessment

Continuing assessment during prenatal visits should focus on different issues appropriate to the woman's needs and to the gestational age of the unborn baby. During assessments, health care providers should explain what is being done and how the information might be used; they should also provide relevant education about the procedures, thereby enabling the woman to be a partner in her care. Ongoing adherence to the practice of women-held records facilitates this process. Health care providers are referred to the document *Healthy Beginnings: Guidelines for Care During Pregnancy and Childbirth* (SOGC, 1998a) for practice guidelines for continuing assessment.

Discomforts of Pregnancy

Many healthy women experience a variety of symptoms or discomforts during pregnancy. Most of these accompany the normal physiological changes of a woman's body as it adapts to pregnancy. Whereas some of the symptoms continue throughout pregnancy, others are temporary. Care providers should provide women with information as to potential discomforts in advance, and offer practical solutions. The causes and strategies of coping with these discomforts are addressed in Appendix 5.

Education to Recognize Some of the Important Complications of Pregnancy

Women will want to understand any signs or symptoms that might signal a problem during pregnancy. Health care providers can assist them by sharing the relevant information. For example, pregnant women should be advised to contact their care provider at once if any of the signs listed below appear. Such signs could indicate pregnancy loss, antepartum hemorrhage, preterm labour and pre-labour rupture of membranes, hypertensive disorders of pregnancy, post-term pregnancy, infection, or hyperemesis gravidarum. The signs include:

- bleeding from the vagina, including spotting;
- fluid leaking from the vagina at any time before labour begins;
- sudden swelling or puffiness of the face, hands, or feet (particularly if swelling becomes worse or changes);
- dizziness, lightheadedness, fainting spells, or loss of consciousness;
- headaches that are severe and last for a prolonged period of time;

- visual disturbances such as blurring, spots, flashes, or double vision;
- abdominal pain;
- chest pain;
- pain or burning when passing urine;
- chills, fever, or a rash following a fever;
- nausea or vomiting that lasts throughout the day;
- absence or decrease of fetal movement after the 24th week of pregnancy;
- signs of preterm labour (especially for women having a multiple pregnancy) (See Table 4.7.);
- exposure to infectious diseases, including rubella, measles, hepatitis B, and sexually transmitted diseases including HIV; and
- jaundice or dark-coloured urine.

Women need to be familiar with the signs of preterm labour. They need to know what to do should they occur. This information is summarized in Table 4.7.

Table 4.7 Signs of Preterm Labour

Any one or more of:

- regular contractions or tightening of the uterus
- increase or change in vaginal discharge (watery, mucousy, or bloody)
- menstrual-like cramps or low, dull backache
- sensation of the baby pushing down in the pelvis
- an unusual need to urinate, urgently or often
- abdominal cramps, with or without diarrhea

What a woman should do if she suspects that she is in preterm labour:

- stop whatever activity she is doing and rest
- call the obstetrical unit where she is planning to deliver her baby and describe her symptoms to a nurse

The woman should go immediately to the nearest emergency room if:

- her water breaks
- she is bleeding
- she is in pain
- she is having regular contractions that are coming closer together and getting stronger

Source: SOGC, *Healthy Beginnings: Your Handbook for Pregnancy and Birth,* Ottawa, 1998b.

Prenatal Education

Out of respect for the principles of family-centred care, health care providers should strive to make learning and sharing of information a component of every contact with the woman and her family. Prenatal education is offered to support healthy lifestyles; improve self-esteem or the sense of self-competence; enhance the family relationship, including communication between the woman and her partner; enable childbirth preparation; allow for a smooth postpartum adjustment; promote successful infant feeding (focusing on breastfeeding as the optimal choice); increase communication between the woman and her health care providers; and nurture the appreciation that birth is a normal, healthy event. There are a variety of strategies for providing prenatal education.

Many women and families choose to participate in group prenatal education programs. Such programs take place in a wide variety of settings: hospitals, public health units, physician's and midwife's offices, community health centres, community agencies, offices of consumer groups, colleges, the educator's place of private practice, and the client's or educator's home. Each setting has advantages and disadvantages. No setting is ideal for every family.

The benefits of participation in prenatal education are difficult to document in a systematic manner. The widespread popularity of prenatal education testifies to the desire of expectant parents for prenatal education (Enkin et al., 1995). Enkin states that "it is possible that the actual existence of prenatal classes is more important than the details of what is taught — that 'the medium is the message'" (Enkin et al., 1995). Indeed, benefits have been demonstrated in terms of reduced amounts of analgesic medication used and increased satisfaction with birth. However, the full impact of childbirth education cannot be assessed solely by its effect on the individual woman giving birth, for there may be indirect effects that engender significant changes in the birth ambience for all women (Enkin et al., 1995). Offering a variety of different types of programs, with explicitly stated aims, may enable a woman (or couple) to choose the program most likely to meet the needs at hand.

Wherever "prenatal education" takes place, the guiding principles should be those of adult learning theory or a learner-centred perspective. The educator, as facilitator rather than teacher, should emphasize the validity of the learner's background and experiences, share control of both the content (what the learner should or needs to know, so that content means something to the learner) and the process (how the learner will learn it), emphasize interdependence in the learning situation, and facilitate the learner's development by meeting the learning needs. In essence, both facilitator and learner share responsibility for the learning situation.

Role of the Prenatal Educator

Prenatal educators are but one member of a woman's health care circle. They work in collaboration with, and not directed by, others. They must therefore:

- act as teachers, providing information about the physical, emotional, and social aspects of pregnancy, birth, and early parenting;
- enable the woman and her support people to develop skills to cope with pregnancy, birth, and early parenting;
- skill build on the woman's innate knowledge of how to give birth; and
- serve as advocates for child-bearing families and family-centred maternity care.

BACKGROUND AND COMPETENCIES

Prenatal education combines aspects of the art and science of many disciplines, including nursing, midwifery, physiotherapy, social work, and education. No single academic background is a prerequisite for the role of prenatal educator. As in any profession, competencies vary.

Prenatal educators should be enthusiastic, sensitive, respectful of others, and view parents as peers capable of making decisions pertaining to their care. The educators should be able to do the following:

- present information in a clear, concise, non-authoritarian manner;
- develop a learner-centred curriculum;
- prepare and meet objectives;
- choose and use appropriate audiovisual material;
- employ the principles of adult education;
- use a variety of teaching methods that will appeal to the varied ways in which individuals learn — that is, lecture; role play; buzz groups; small or large group discussions; videos or slides; and other audiovisual means such as posters, models, visual aids, demonstration/return demonstration, reading material, and so on;
- employ the principles of group process and facilitation;

- self-evaluate;
- distinguish between personal beliefs and scientific fact;
- maintain familiarity with current findings and changes in obstetrics;
- refer women and families to community resources;
- help parents develop realistic goals for pregnancy, birth, and early parenting;
- promote collaboration and cooperation between the health care providers; and
- support the right of the woman to make informed choices based on a knowledge of benefits, risks, and alternatives.

Education Issues in the Prenatal Period

CONTENT

All issues involved in pregnancy, labour, and birth that may affect a woman and her family should be dealt with in a proactive way, within the context of prenatal education. In its broadest definition, prenatal education topics touch on preparation for pregnancy, labour, birth, early parenting, infant feeding, changing roles and relationships, sexuality, and family planning. The content should be offered at the appropriate time during pregnancy. One series may include all of this information. Alternatively, programs can focus on the different phases: early pregnancy, labour and birth preparation, and the postpartum period.

Content should include information on the natural physiological and psychological patterns of pregnancy, labour, birth, and the postpartum period. The following aspects should be dealt with:

- anatomy and physiology of the male and female reproductive systems, and human sexuality;
- changes during pregnancy: physical and emotional;
- fetal growth and development;
- prenatal screening and diagnostic tests: purpose and use;
- teratogenic and iatrogenic influences in pregnancy;
- variations of normal and warning signs;
- complications of pregnancy and ways of coping with high-risk pregnancy;
- maternal and infant nutrition, focusing on breastfeeding as the optimal means of infant feeding;
- normal labour and birth;
- cesarean birth and vaginal birth after cesarean (VBAC);

- common medical interventions and procedures, including the indications, risks, benefits, and alternatives for each;
- a baby's characteristics and behaviour;
- role of the labour support person(s);
- anticipatory guidance for the postpartum period, including breastfeeding, care of the baby, normal changes to expect, and emotional and physical support for the woman;
- early warning signs of postpartum complications for the woman and her baby; and
- coping methods for labour: relaxation techniques (progressive relaxation, touch relaxation, visualization, imagery, music); breathing (either in a pattern or as a natural response to the forces of labour); comfort measures (massage, effleurage, counterpressure, heat/cold or water therapy, nourishment, etc.); positioning and movement for comfort and efficiency during labour; and exercises for body awareness and conditioning.

FAMILIARIZATION WITH THE PLACE OF BIRTH

Prenatal educators usually include, or suggest, a visit to a birth facility for expectant mothers and their partners. A tour of the birth facility serves many purposes: it allays fears and anxieties about the hospital or birth place; it allows the educator to introduce new material in a concise manner; and it enables the educator to provide concrete demonstrations.

These visits help to make the impending birth more real. The educator must be completely familiar with the setting, for the participants may need to be "walked" through the path they will take on arrival to give birth. As well, families may need to become familiar with such items as birthing beds, squatting bars, birth stools, monitors, warming beds or tables, isolettes, and so on. Policies such as visiting hours can also be outlined. Adequate time should be allowed for questions at the end of the visit.

GROUPS WITH SPECIAL NEEDS

Prenatal education is an integral part of prenatal care for *all* families. Some groups of women, however, such as adolescents, Aboriginal women, immigrant and refugee women, women with low incomes, incarcerated women, and women having a second or subsequent baby may never have used the existing services. Moreover, not all women feel comfortable in groups. Creative ways to provide prenatal education for all women, in consultation with them, need to be found. Such programs should be community-based to give the women and their families ownership and responsibility in planning such programs.

Educators and care providers need to work with the community of women to identify barriers that discourage women's accessing of prenatal education and to find solutions. Women cite many reasons for not attending prenatal education programs. These include employment obligations; lack of child care; bad timing; inconvenient locations; differing cultural, ethnic, or religious orientations; excessive costs; and lack of awareness.

Prenatal education for adolescents need not differ in content, although the manner in which information is taught may indeed change. The goals of prenatal education can be attained if the teaching occurs in an atmosphere that is supportive, informal, and non-judgmental. Programs located within the adolescent's own community will increase their availability, accessibility, and comfort level (Altendorf and Klepacki, 1991). Starting a for-credit prenatal program as part of young people's regular school curriculum could be the ultimate way of reaching those young women who are still in school.

For all these groups, cost may be a factor. Some public health departments and community health centres provide services free or are able to waive fees. However, even when done with sensitivity, fee waiving can still be isolating and embarrassing for the woman, and thereby inhibit attendance.

Conclusion

The organization and provision of family-centred prenatal care gives women, their families, and their unborn babies the chance to move into the next phase of childbearing, labour, and birth with optimal opportunities for health and well-being. As well, working in partnership with women and families offers health care providers a significant opportunity to influence the health of future generations.

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APPENDIX 1

Example of a Woman-Held Prenatal Record

Doctors'/midwives' names and phone numbers:

....

....

....

Labour support person: ....

Phone number: ....

Phone number of baby's doctor: ....

Other phone numbers: ....

....

On-call System

Your doctor (or a designate) covers you 24 hours/day, 8:00 a.m. Monday to 5:00 p.m. Friday. Ask for your doctor or his/her designate by calling the pager operator at 000-0000.

Birth Plans

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Comments/Notes

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Prenatal classes:		Clinic appointments:	
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....
....	....	....	....

Name:

....

....

Partner:

....

....

Age: ....

EDC: ....

LMP: ....

Height: ....

Pre-pregnant weight:

....

Blood Work:

- ☐ Blood group
- ☐ Hepatitis screen
- ☐ Antibodies
- ☐ Glucose screen
- ☐ Rubella titre
- ☐ HIV
- ☐ Hemoglobin
- ☐ Syphilis

Other Tests :

☐ Ultrasound

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☐ Allergies

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Date	Weight	Blood pressure	Urine		Gestational age in weeks	Height of fundus (cm)	Fetal heart rate and activity	Presentation and position	Remarks	Return to clinic
			Protein	Glucose						

Source: BC Women's Family Practice Maternity Service, Vancouver, British Columbia; 1998.

APPENDIX 2

Screening

CHLAMYDIA

While still controversial, there is fair evidence to support screening pregnant women during their first trimester for chlamydia and to treat as required (Davies and Wang, 1996). Pregnant women may also be considered for chlamydia screening if they have any of the following criteria: are younger than 20, are unmarried, have a history of other sexually transmitted diseases, have multiple sexual partners, or have a partner with multiple sexual contacts.

GESTATIONAL DIABETES

There is ongoing controversy regarding the effectiveness of gestational diabetes screening programs. The available data do not support the broad recommendation that pregnant women should be screened for "gestational diabetes" (Enkin et al., 1995; Walkinshaw, 1995). However, clinical trials have been planned and centres are encouraged to become involved. Recent data indicate that consideration of women's clinical characteristics allows for efficient selective screening for gestational diabetes (Naylor et al., 1997). The Society of Obstetricians and Gynaecologists of Canada has made recommendations as well (SOGC, 1992). When centres do not have the opportunity to participate in clinical trials, they should refer to these guidelines and draw up an approach for their region.

GROUP B STREPTOCOCCUS

Controversy exists as to whether there should be routine screening for group B streptococcus (GBS). No good trials have yet been done to demonstrate the effectiveness of such screening (Smaill, 1995). Multicentred clinical trials are needed to evaluate the effectiveness of screening to prevent neonatal sepsis.

Although antibiotic treatment given intrapartum does reduce infant colonization and sepsis, the difficulty lies in identifying the high-risk colonized women at the onset of labour (Smaill, 1997). The Society of Obstetricians and Gynaecologists of Canada and the Canadian Paediatric Society have developed a consensus document, which states the following:

Until more specific information is available, two methods are acceptable to identify and manage women whose newborns might be at increased risk of GBS disease:

- *universal screening of all pregnant women at 35 to 37 weeks' gestation, using a single, combined vaginal-anorectal swab*[1] *and the offer of intrapartum chemoprophylaxis to all GBS-colonized women*
- *no universal screening, but intrapartum chemoprophylaxis for all women with identified risk factors. This strategy should also be used in cases where universal screening is the policy but either was not done or the test results are unavailable.*

Intrapartum chemoprophylaxis is recommended for the following risk factors:

- *preterm labour (greater than 37 weeks' gestation)*
- *term labour (greater than or equal to 37 weeks' gestation)*
- *prolonged rupture of membranes. Chemoprophylaxis should be given if the labour and/or ruptured membranes situation is likely to continue beyond 18 hours (neonatal benefits are optimally achieved if antibiotics are given at least 4 hours prior to birth).*
- *maternal fever during labour (greater than 38° Celsius, orally).*

(SOGC, 1997a)

MATERNAL SERUM MARKER SCREENING

Maternal serum marker screening determines whether a pregnant woman is at increased risk of carrying a baby with either Down syndrome or an open neural tube defect (NTD). The three serum markers measured are alpha fetoprotein, human chorionic gonadotrophin, and unconjugated estriol. This is an evolving program, and the availability of maternal serum marker screening varies across Canada. In some jurisdictions, not all three serum markers are measured. In some provinces, women are required to pay for this procedure.

The Canadian Task Force on the Periodic Health Examination states that there is fair evidence to offer triple-marker screening to women under 35 years of age within a comprehensive screening and prenatal diagnosis program, one that includes education, interpretation, and follow-up. However, concerns regarding these tests relate to limited sensitivity of the screening test, the number of women who receive false-positive results, and the number of women who receive positive results but do not subsequently undergo amniocentesis (Carroll, 1994; Dick, with the Canadian Task Force on the Periodic Health Examination, 1996). For women over 35 years, the evidence supports offering amniocentesis. Women may choose maternal serum screening as an alternative.

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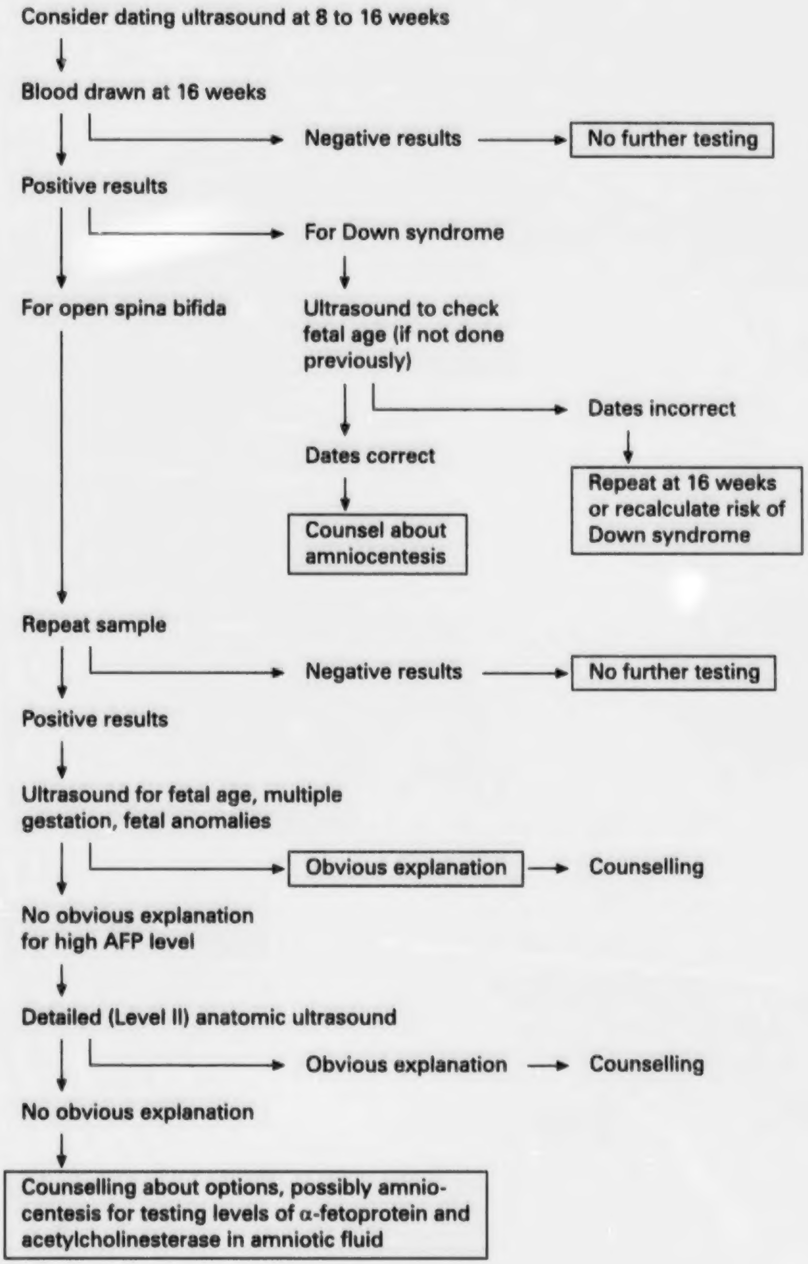
[1] Women can be given the option of doing their own swab (Molnar et al., 1997).

Women should be told of all the requisite steps they will go through to confirm a positive test. Such screening, moreover, should only be offered within a comprehensive screening and prenatal-diagnosis program that includes education, interpretation, and follow-up (Dick, with the Canadian Task Force on the Periodic Health Examination, 1996). Women and families should be provided with the information regarding triple screening during pregnancy; they can then decide whether they want it or not. It is critical to inform fully all parents interested in screening. Some women find written material, such as brochures, helpful. Counselling about the test should also be provided, including possible outcomes, further testing, and risks. If the test is to be done, the serum sample should be drawn at 16 to 18 weeks' gestation — the test's optimal time of sensitivity. A counselling protocol should be followed. (See Table on next page.)

Offering maternal serum marker screening requires education of women and health care providers, accurate and prompt laboratory testing, competent counselling and support services, access to consultants for sonography and complex prenatal diagnosis, and available options for pregnancy termination. It lays a heavy burden of cost on the population, and puts stress on women (Carroll, 1994). Maternal serum marker screening is complex, both to explain and to understand. The difficulty lies in how to explain a screening test, the difference between it and a diagnostic test, and the interpretation of test results. Specifically, women may have difficulty understanding why an individual with a negative screening test for a condition may still have the condition, or how it is possible to have a positive screening test and yet be free of the disorder. In the context of triple screening, the initial cut-off is set very high and many individuals have positive results. This ensures that a high proportion of those women carrying a baby with Down syndrome or an NTD will be detected by the screening test. However, it also means that many women will have to go through the diagnostic test who do not, in fact, have a baby affected with one of these conditions (Nimrod and Stewart, 1997). Therefore, parental anxiety associated with this screening and the false-positive rate may be high. Clearly, better education of health care providers and women is needed (Carroll et al., 1997).

Maternal Serum Screening Protocol


Consider dating ultrasound at 8 to 16 weeks
Blood drawn at 16 weeks
Negative results
No further testing
Positive results
For Down syndrome
For open spina bifida
Ultrasound to check fetal age (if not done previously)
Dates incorrect
Dates correct
Repeat at 16 weeks or recalculate risk of Down syndrome
Counsel about amniocentesis
Repeat sample
Negative results
No further testing
Positive results
Ultrasound for fetal age, multiple gestation, fetal anomalies
Obvious explanation
Counselling
No obvious explanation for high AFP level
Detailed (Level II) anatomic ultrasound
Obvious explanation
Counselling
No obvious explanation
Counselling about options, possibly amniocentesis for testing levels of α-fetoprotein and acetylcholinesterase in amniotic fluid

Source: Carroll J. Maternal serum screening. *Canadian Family Physician* 1994;40:1760. Reproduced with permission of the *Canadian Family Physician*.

ULTRASOUND

Controversy surrounds the routine use of ultrasound during pregnancy. The controversy is based on the non-statistically significant overall impact of routine ultrasound on perinatal mortality, the issue being not the acknowledged ability of ultrasound to pick up certain congenital anomalies, but the fact that individual women and families are, at times, choosing not to take action based on this information. The other major use of a routine second trimester ultrasound has been to establish accurate gestational age. However, when women have accurate information on their last menstrual period, the routine ultrasound adds little. In fact, under those conditions, an estimate based on the last menstrual period is more accurate. The Cochrane Library states: "Routine ultrasound examination results in earlier detection of multiple pregnancies and reduced rates of induction of labour for 'post term' pregnancy, but there is no evidence that it improves substantive clinical outcomes" (Neilson, 1998). The Society of Obstetricians and Gynaecologists of Canada recommends that "... After appropriate discussion about the potential benefits, limitations and safety of the examination, women should be offered an ultrasound centred at 18 to 19 weeks gestation" (SOGC, 1999). The Canadian Task Force on the Periodic Health Examination (1992) states "There is fair evidence to support the inclusion of a routine single ultrasound examination in the management of women with no clinical indication for prenatal ultrasonography" (Canadian Task Force on the Periodic Health Examination, 1992).

In the face of this ambiguous information, clinicians and health planners will need to decide whether these results justify the expense of providing, and paying for, a routine ultrasound examination in early pregnancy (Neilson, 1998). Individual women will need to decide if the examination would lead to information that they can use in their decision-making process.

HIV/AIDS

Three factors support the concept of offering HIV testing to every pregnant woman during pregnancy: the increasing rates of HIV infection in women, the potentially devastating effect on the baby of vertical transmission from the mother, and the proven efficacy of AZT in reducing vertical transmission (SOGC, 1997b).

It is therefore recommended that HIV testing be offered to all pregnant women. This recommendation is supported by the Society of Obstetricians and Gynaecologists of Canada (1997b), the Canadian Paediatric Society (1994), the College of Family Physicians of Canada (1993), and the Canadian Medical Association (1995). Women should be provided with information about HIV testing, including the risks and benefits of finding a positive result and the success of treatment in reducing vertical transmission. The testing should be carried out with the agreement of the woman and with due regard to confidentiality. Women who are found to be positive should be referred to an expert with special training in this area, and should be offered treatment with AZT as currently recommended (SOGC, 1997b).

Whenever HIV testing is done, comprehensive pre- and post-test counselling are essential.

APPENDIX 3

Antenatal Psychosocial Health Assessment (ALPHA)

Antenatal psychosocial problems may be associated with unfavourable postpartum outcomes. The questions on this form are suggested ways of inquiring about psychosocial health. Issues of high concern to the woman, her family, or the caregiver usually indicate a need for additional supports or services. When some concerns are identified, follow-up and/or referral should be considered. Additional information can be obtained from the ALPHA Guide*. *Please consider the sensitivity of this information before sharing it with other caregivers.*

Addressograph

ANTENATAL FACTORS	COMMENTS/PLAN
FAMILY FACTORS	
Social support (***CA, WA***, PD) How does your partner/family feel about your pregnancy? Who will be helping you when you go home with your baby?	
Recent stressful life events (***CA, WA, PD***, PI) What life changes have you experienced this year? What changes are you planning during this pregnancy?	
Couple's relationship (***CD, PD***, WA, CA) How would you describe your relationship with your partner? What do you think your relationship will be like after the birth?	
MATERNAL FACTORS	
Prenatal care (late onset) (***WA***) First prenatal visit in third trimester? (check records)	
Prenatal education (refusal or quit) (***CA***) What are your plans for prenatal classes?	
Feelings toward pregnancy after 20 weeks (***CA, WA***) How did you feel when you just found out you were pregnant? How do you feel about it now?	

Associated postpartum outcomes

The antenatal factors in the left column have been shown to be associated with the postpartum outcomes listed below. ***Bold, Italics*** indicates ***good*** evidence of association. Regular text indicates fair evidence of association.

CA – Child Abuse **CD** – Couple Dysfunction **PI** – Physical Illness **PD** – Postpartum Depression **WA** – Woman Abuse

ANTENATAL FACTORS	COMMENTS/PLAN
Relationship with parents in childhood (*CA*) How did you get along with your parents? Did you feel loved by your parents?	
Self-esteem (***CA***, WA) What concerns do you have about becoming/being a mother?	
History of psychiatric/emotional problems (*CA, WA*, PD) Have you ever had emotional problems? Have you ever seen a psychiatrist or therapist?	
Depression in this pregnancy (*PD*) How has your mood been during this pregnancy?	
SUBSTANCE USE	
Alcohol/drug abuse (***WA***, CA) How many drinks of alcohol do you have per week? Are there times when you drink more than that? Do you or your partner use recreational drugs? Do you or your partner have a problem with alcohol or drugs? Consider CAGE (**C**ut down, **A**nnoyed, **G**uilty, **E**ye opener)	
FAMILY VIOLENCE	
Woman or partner experienced or witnessed abuse (physical, emotional, sexual) (*CA*, WA) What was your parents' relationship like? Did your father ever scare or hurt your mother? Did your parents ever scare or hurt you? Were you ever sexually abused as a child?	
Current or past woman abuse (***WA***, CA, PD) How do you and your partner solve arguments? Do you ever feel frightened by what your partner says or does? Have you ever been hit/pushed/slapped by a partner? Has your partner ever humiliated you or psychologically abused you in other ways? Have you ever been forced to have sex against your will?	
Previous child abuse by woman or partner (*CA*) Do you or your partner have children not living with you? If so, why not? Have you ever had involvement with a child protection agency (i.e. Children's Aid Society?)	
Child discipline (*CA*) How were you disciplined as a child? How do you think you will discipline your child? How do you deal with your kids at home when they misbehave?	

FOLLOW-UP PLAN:

☐ Supportive counselling by provider
☐ Additional prenatal appointments
☐ Additional postpartum appointments
☐ Additional well-baby visits
☐ Public Health referral
☐ Prenatal education services
☐ Nutritionist
☐ Community resources/mothers' group
☐ Homecare
☐ Parenting classes/parents' support group
☐ Addiction treatment programs
☐ Smoking cessation resources
☐ Social worker
☐ Psychologist/Psychiatrist
☐ Psychotherapist/marital/family therapist
☐ Assaulted women's helpline/shelter/ counselling
☐ Legal advice
☐ Children's Aid Society
☐ Other: ....
☐ Other: ....
☐ Other: ....
☐ Other: ....

COMMENTS:

....
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....
....
....
....

Date .... Signature ....

Copyright: ALPHA Project 1993 Version: May 1996.

* The ALPHA Guide is available through the Department of Family and Community Medicine, University of Toronto.

APPENDIX 4

Nutrients of Special Concern During Pregnancy

CALCIUM AND VITAMIN D

Pregnant women need calcium and vitamin D to maintain the integrity of their bones, while providing for the skeletal development of the unborn baby. The recommended daily intake is 1200 to 1500 mg of calcium, depending on age, and 5.0 μg or 200 IU of vitamin D for pregnant women (Health Canada, 1999).

Available data suggest that the average dietary calcium intake of Canadian women of childbearing age is lower than the recommendations. Certain groups may be at risk for low calcium intake, including those of low socio-economic status, members of some cultural groups, pregnant teenagers and vegans. Although overt signs of vitamin D deficiency in the general Canadian population are not widespread, certain groups may be at risk. These include those who consume no fluid, evaporated or powdered milk or margarine; those who have clothing habits that cover the skin; those who live in northern communities associated with limited sunlight exposure during the winter months; those who are indoors most of the time; and those people with dark skin pigmentation (Health Canada, 1999).

Canada's Food Guide to Healthy Eating (1997) recommends that pregnant women consume three to four servings of milk products daily as sources of calcium and vitamin D. Milk products are the most concentrated dietary sources of highly absorbable calcium, and the vitamin D content of fluid milk, in particular, enhances calcium absorption. When eating patterns suggest inadequate intake of calcium and/or vitamin D and when exposure to sunlight is limited, adding more sources of these nutrients to the diet is the preferred solution. (See *Nutrition for a Healthy Pregnancy: National Guidelines for the Childbearing Years*, Health Canada, 1999 for sources of these nutrients.) For some women, calcium and/or vitamin D supplements may be appropriate.

IRON

Iron status is a significant factor in the outcome of pregnancy for both women and their babies. The recommended daily intake for women aged 19 to 49 years is 13 mg in the first trimester of pregnancy, 18 mg in the second trimester, and 23 mg in the third trimester. The increase in recommended iron intake during the second and third trimesters acknowledges the likelihood not only that women's stores of iron may be low but that it may be difficult to obtain this level of iron from dietary sources alone. All women should be assessed for iron status in the early weeks of pregnancy. Every effort should then be made to improve and/or maintain a good status throughout the course of pregnancy.

The Canadian Task Force on the Periodic Health Examination states that there is currently insufficient evidence to recommend for or against routine iron supplementation of all pregnant women. The Scientific Review Committee and the US Institute of Medicine, recognizing that many women have insufficient iron stores to meet the needs of pregnancy, advise daily low-dose iron supplementation to all women in the second and third trimesters (Health Canada, 1999).

FOLIC ACID

Studies provide strong evidence that preconception folic acid supplements can reduce the risk of a neural tube defect (NTD)-affected pregnancy (NTDs include spina bifida, anencephaly, and encephalocoele). It is generally accepted that all women who are planning a pregnancy, and those in the early weeks of pregnancy, should consume 0.6 mg of folate daily. (This is discussed in detail in Chapter 3.)

Women should be advised to take 0.4 mg of folic acid supplementation, starting at least one month prior to becoming pregnant and continuing through the early weeks of pregnancy, and to eat a healthy diet, according to *Canada's Food Guide to Healthy Eating* (1997), taking care to include folate-rich foods. Women at risk may require a higher dose.

ESSENTIAL FATTY ACIDS

It is important that pregnant women consume adequate amounts of essential fatty acids (EFAs), linoleic acid and ∝-linoleic acid in their daily eating patterns for proper neural and visual development of their unborn babies. The recommended nutrient intake for EFAs increases during pregnancy to meet the needs of the growing baby. To achieve the recommended intake, pregnant women should be encouraged to increase their intake of EFAs. Pregnant women should be encouraged to include sources of essential fatty acids such as soy, canola oils and non-hydrogenated margarines, soy-based products (tofu, vegi burger) and salad dressings made of soy or canola oils in their daily eating pattern.

VITAMIN AND MINERAL SUPPLEMENTATION

Following a healthy eating pattern according to *Canada's Food Guide to Healthy Eating* (1997) is the preferred way to meet nutrient requirements during all life stages, including pregnancy. When inadequate nutrient intakes are suspected, vitamin or mineral supplementation may complement daily intakes to achieve the recommended intakes. Women who are taking multivitamin/multimineral supplements should be cautioned to take no more than one tablet per day to avoid exceeding intake of 10,000 IU of vitamin A per day. When taken in excess, vitamin A (retinol) is known to increase the risk of birth defects. Avoid bone meal and dolomite as supplemental calcium sources. Samples of both products have been known to be contaminated with lead (Health Canada, 1999).

APPENDIX 5

Common Discomforts of Pregnancy

Discomfort and Cause	**Approach**
Fatigue is due to growth and development of the placenta, which will not be completed until the end of the first trimester. The body is adjusting as well to the many other physical and emotional demands of pregnancy.	When placental development is complete, around the end of fourth month, and the woman's body has adjusted, women may return to more normal energy levels. Resting, eating well, decreasing workload and support by significant others during this time may help to alleviate fatigue.
Nausea and Vomiting/Morning Sickness: the cause is not known, but may be associated with hormonal changes. The condition occurs in many women, often beginning early in the pregnancy and subsiding about the 14th week. It can occur at any time of day. It is more likely to happen when blood sugar is low, usually in the morning.	There are many ways to alleviate symptoms and minimize effects, such as eating a diet high in protein and complex carbohydrates; drinking plenty of fluids; avoiding the sight, smell, and taste of foods that trigger nausea; employing acupressure; and eating often and before feeling hungry or nauseated.
Heartburn and Indigestion are due to the progesterone hormone mediation of early pregnancy. Gastrointestinal tract motility and digestion are slowed; peristalsis is reversed, and the cardiac sphincter of the stomach relaxes, allowing reflux of acid gastric contents.	Eat frequent small meals. Eliminate foods that cause gastrointestinal discomfort (hot, spicy, fried, fatty foods, processed meals; caffeine; alcohol). Avoid lying down immediately after eating. Avoid smoking. Rest or sleep with head and thorax elevated approximately six inches. Use antacids *only* after consultation with care providers.
Excessive Saliva: the cause is not known, but may be associated with reluctance to swallow saliva related to nausea.	Brushing teeth frequently, rinsing with mouthwash, or chewing gum may help to dry the mouth.
Constipation is related to progesterone hormone mediation. It causes reduced gastrointestinal motility, which results in increased absorption of water and hardening of the stool. Decreased physical activity can contribute to constipation too. Later in pregnancy, compression of the intestine by the enlarging uterus contributes as well.	Avoid constipating, refined foods. Increase roughage in the diet (high-fibre foods). Increase fluid intake, and exercise. Laxatives should not be used without consulting care providers.
Gas is due to progesterone-mediated reduced gastric motility.	Maintain regular bowel habits, eat slowly, avoid gas-producing foods, and exercise.

Discomfort and Cause	Approach
Hemorrhoids and Rectal Bleeding are due to the pressure of the pregnant uterus, and the untreated constipation that accompanies straining. Decreased activity may be a contributing factor.	Avoid constipation (through adequate nutrition and fluid intake). Sleep in a side-lying position and not on back (avoids pressure on the rectal veins). Avoid standing/sitting for prolonged periods. Avoid straining during bowel movements. In the postpartum period, use cold compresses or warm sitz baths for comfort. Use topical medications or suppositories. Kegel exercises may help to encourage venous return.
Urgency and Frequency of Urination are due to increased pressure on the bladder by the uterus, limiting its ability to fill in early pregnancy. This causes an increased urge to void. In late pregnancy when the uterus has risen in the pelvis, engagement of the presenting part places pressure on the bladder again, with the same results. Pregnant women should report any signs of burning or pain with urination to their care provider for investigation of urinary tract infection.	Ensure that bladder empties completely. Limit fluid intake before bedtime, but do not restrict fluids otherwise.
Stress Incontinence is due to increasing pressure of the enlarging uterus on the bladder, causing many pregnant women in their last trimester to leak urine when they cough, laugh, or sneeze.	Do Kegel exercises to strengthen pelvic floor muscles.
Varicose Veins are caused by increased venous pressure in the pelvis and lower extremities toward the end of pregnancy. Hormone mediation relaxes the wall of the veins. Fatigue and family history may contribute to the problem.	Prevent or minimize the symptoms. Wearing elastic support hose, resting, elevating feet and legs when sitting or lying (do not sit with legs crossed at the knee), avoiding restrictive clothing, and exercising (walking) to improve circulation are indicated. Varicosities of the vulva may occur and respond well to support.
Edema (Swelling) is caused by the slowing of circulation due to uterine pressure on the inferior vena cava. This usually occurs in the last trimester, causing feet and ankles to swell.	Do many of the same things mentioned for varicose veins. Pregnant women should be counselled to report edema that comes on suddenly or swelling of the hands and/or face.
Nosebleeds and Stuffiness result from increased circulation in the nasal area (influenced by the hormone, estrogen). Changes occur in the nasal turbinates with an accompanying edema, leading to congestion. This congestion and drying makes nosebleeds more common in pregnant women.	Use vaseline in nares to relieve dryness and prevent nosebleeds. Increase humidity to provide moisture. In the event of nosebleed, control the bleed using conventional first aid. If bleeding persists or is difficult to control, the care provider should be consulted. Adequate dietary vitamin C keeps veins healthy and elastic.

Discomfort and Cause	Approach
Changes in Skin Pigmentation and Complexion: due to melanocyte-stimulating hormone action resulting from influence of progesterone and estrogen. Skin pigmentation deepens; skin may become oily or acne exacerbate. Pruritis may also be a problem (abdominal region); while the cause is unknown, it may be due to stretching of skin and increased excretory function of skin. These are not preventable and women should be reassured that these conditions usually resolve themselves after pregnancy.	The following strategies may maintain moisture and relieve problems of the skin: drink plenty of fluids, apply moisturizers while skin is still damp, keep rooms humidified, decrease the number of baths taken, and use a mild soapless cleanser. Avoid scratching as this will only damage tissue. Avoid excessive sunlight and wear a sunblock of SPF 15 or more in the sun.
Breast Changes: due to changes in the levels of estrogen and progesterone that cause changes in the ductular-lobular-alveolar growth.	Women may choose to wear a support bra if it makes them feel more comfortable. A bra worn at night can provide additional support for larger breasts. Because it is a drying agent, soap should be avoided on the nipples.
Headaches: thought to be due to the increased nasal swelling and congestion (sinuses); also thought to be induced by fatigue and stress.	Relax, rest, eat regularly, and apply alternating hot and cold packs for sinus or tension headaches. Applying ice to the back of the neck can also help. Notify care providers if headaches are accompanied by a fever, visual disturbances, or edema of hands and face.
Backache: usually a result of pressure and weight of enlarging uterus and relaxation of ligaments (hormone mediation). Poor posture and obesity may also be contributory.	Keep weight gain within recommended parameters. Avoid shoes without proper support. Lift and carry objects correctly. Sleep on a firm mattress. Practise pelvic tilt and dromedary droop exercises daily. Massage may also bring relief and relaxation.
Abdominal Pain: occasional and non-persistent pain is due to stretching of muscles and ligaments supporting the uterus.	Rest in a comfortable position. If accompanied by fever, chills, bleeding, increased vaginal discharge, contractions, faintness, or other unusual symptoms, the care provider should be contacted immediately.
Leg Cramps: are caused by uterine pressure on the blood vessels and the abdominal nerves. Impaired circulation to the legs caused by increased venous pressure can also lead to leg fatigue and cause painful cramps (usually at night).	Wear elastic support hose. Elevate feet. For cramps, straighten the leg and flex the ankle and toes upwards. Avoid massaging a cramp. Contact the care provider if the pain persists (possibility of thrombus).
Overheating: is due to increased hormone circulation.	Bathe and dress in layers. Drink fluids to replace those lost through perspiration.

— CHAPTER 5 —

Care During Labour and Birth

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Introduction

For most women and families, labour and birth is a time of excitement and anticipation, along with uncertainty, anxiety, and fear. Giving birth represents a major transition in a woman's life — not only is she becoming a mother, she will also be growing and learning throughout the process. The memories and experiences of labour and birth remain with women throughout their lives. Clearly, the support and care they receive during this time is critical. The overall aim of caring for women during labour and birth is to engender a positive experience for the woman and her family, while maintaining their health, preventing complications, and responding to emergencies.

The principles of family-centred maternity and newborn care are particularly important at this time, especially the recognition that:

- birth is a celebration. It is a privilege for all family members and health care providers who are present;
- birth is a healthy process;
- health care providers play a profound role at the time of birth — facilitating attachment between mothers and newborns, as well as family closeness;
- continuity of caregiver and setting is preferred. For example, labour and birth should take place in the same location unless a cesarean birth is anticipated;
- policies and procedures are focused on the needs of the woman and her baby — physical, social, and psychological;
- decisions are made in full consultation with the woman and her supporters;
- women and their families need privacy and comfort at all times, but especially during labour and birth; and
- the family is a unit, its members not normally separable during their stay in the hospital or birthing centre.

Many environmental elements influence a woman's care during labour and birth. These include staffing patterns, policies, and standard procedures, as well as the attitudes of staff, expectations of professionals, and expectations of those receiving care. These in turn reflect the local culture and the interaction of national, regional, and professional constituencies — all of which are governed by beliefs, traditions, and established norms. The focus on birth as a medical rather than a personal event risks minimizing the importance of support, mastery/coping, attachment, and the healthy nature of the event. Comparative audits of clinical practice for women with healthy pregnancies, conducted by various kinds of care providers, all conclude that supportive, continuous care and the appropriate use of technology are central issues in achieving an optimal outcome (Hodnett, 1998a).

An active approach to changing attitudes and environments is necessary. The introduction of concepts developed from studies of birth rooms, single-room maternity care, and birthing centres can be helpful. But for any of these environmental developments to be effective, they must be based on a genuine awareness among staff of the central role of attitudes and beliefs, as well as a coherent philosophy of care. In the absence of such an approach, physical changes reflect little more than marketing (Klein, 1993).

Place of Birth

In Canada, most women give birth in hospitals. Some free-standing birth centres do exist, however, and a small but growing number of women choose to give birth at home. Free-standing birth centres, births at home, and small Level I hospitals providing maternity and newborn care services to healthy pregnant women and families share certain similarities. It is recommended that basic maternity services and caregiver skills be present in these settings. Chapter 2 describes these services and skills in detail.

The design of the birth facility does not necessarily engender more family-centred maternity and newborn care. In fact, the philosophy of care is primarily sustained by the care providers. While home-like settings are more agreeable work environments for health care providers, and the environments may favourably influence their attitudes, studies show much stronger evidence of need for change on the part of the care providers than in the actual physical facility of the labour units. If changes to the physical facility are desired, they should be accompanied by efforts to change the behaviour of the health care providers, so that they provide support to women in labour based on family-centred maternity and newborn care principles (Hodnett, 1998a).

Since the early 1980s, many changes have occurred in the provision of hospital maternity and newborn care. Traditionally, hospitals have had separate rooms or units/wards for labour, birth, recovery, and postpartum care. This has given way to many creative strategies to strengthen continuity, efficiency, and effectiveness of care. Today, labour, birth, and recovery, and in a growing number of hospitals, postpartum care, are accommodated in the *same* room with the *same* health care providers. These rooms are called LBRs (labour/birth/recovery rooms), or LBRPs (to include postpartum care), and the overall concept is referred to as "single-room maternity care." Based on equipment, layout, and bed numbers, both simple and complex care can be accommodated effectively. The move to single-room care has involved various simple or elaborate renovations of settings, skills, and style.

It is recommended that *single-room maternity care* — where mothers experience labour, give birth, and spend postpartum time together — should be the standard of care. Such a standard ensures a continuum both of care and of health care providers.

It is further recommended that the multitransfer system — where women labour in one room, give birth in another, and spend postpartum time in a third — be considered obsolete.

Planning for Birth

Every woman giving birth and her family have expectations. In effect, women and health care provider(s) can effectively plan to include what is important to all three parties — women, families, and providers — during birth in many ways. Establishing a birth plan, or suggesting that women state their expectations, wishes, needs, and fears in a written summary is one possible way of achieving that objective. It enables the woman and her health care provider(s) to work toward a common goal — that of a safe and positive childbirth experience. (See Appendix 1 for a sample birth plan.)

A written birth plan has many useful advantages:

- It can encourage open, honest discussion that promotes informed, joint decision making and provides a focus for this discussion.
- It provides a starting point for the woman to reveal her fears, expectations, wishes, and needs.
- It builds trust by fully addressing the individual woman's concerns.
- It is a tool for education (e.g. about options available at the place of birth and the evidence/research basis for certain practices).

- It allows for efficient use of the care provider's time — as the plan is refined, providers can help women to find appropriate resources within the community.
- It offers staff in labour and birth settings an opportunity to learn about the woman, her knowledge, and her wishes.
- It is a vehicle for women to question local practices.

Whether or not a written birth plan is used, it is important that the health care provider(s) and women take the time during prenatal care to discuss their respective expectations.

Care Providers During Labour and Birth

Physicians, midwives, nurses, doulas, and families/significant others may all be involved in caring for the woman as she experiences labour and gives birth. It is essential that all health care providers demonstrate mutual respect and communicate and collaborate effectively. This means recognizing the vital role each one plays in providing a safe and satisfying childbirth experience for women and their families; striving to complement each other in providing care for the women and families; and observing each other's respective competencies and limitations, so that all confer, consult, and transfer care when appropriate. Clear guidelines for consultation and transfer of care between professionals, developed in a consensual manner, must be in place. (One example of effective guidelines can be found in the *Indications for Mandatory Discussion, Consultation and Transfer of Care* [College of Midwives of Ontario, 1994a].) Given the geographic realities of Canada, there is ample opportunity to develop different models of care involving various partnerships among nurses, midwives, family doctors, obstetricians, and other physicians (e.g. surgeons and anesthetists). This is a particular challenge in rural and remote areas.

The presence of the woman's physician, intermittently or continuously throughout labour, should be supported. Mechanisms whereby the physicians are readily available for reassurance, consultation, and care should be in place. As well, there should be a clear understanding of the need for ongoing interprofessional communication, particularly between nursing staff and physicians. (See Chapter 2 for recommendations regarding physicians' availability.)

The role of the midwife in caring for women with healthy pregnancies is re-emerging in Canada. While midwifery practices vary across the country, the midwifery model of care usually supports the principles of informed choice, choice of birth place, and continuity of care.

Nurses have both the privilege and responsibility of caring for women during labour and birth in the hospital setting. The goal of nursing during labour and birth is to promote the maximum physical and emotional well-being of the woman, her baby, and her family (Reeder et al., 1996). In hospital, nurses have more contact than other professionals with the woman during childbirth and her family. Nurses thus have a great influence on shaping the childbirth experience of both the woman and her family (Bryanton et al., 1994).

Developing rapport, trust, and effective communication with health care providers is important to a woman's positive childbirth experience. Nurses caring for women during labour and birth should be knowledgeable about the normal and abnormal processes of labour and birth; have a mastery of appropriate technical skills; communicate and collaborate well with the health care team; and possess the necessary judgment, self-confidence, and skills to cope with stressful, emergency conditions (Reeder et al., 1996; AWHONN, 1997). Nurses must also be able to assess the woman's needs based on her cultural background (vis-à-vis the birth experience) as well as her expectations, needs, and wishes; and to support her in having the most positive childbirth experience possible. The roles of advocate, and provider of physical, emotional, and informational support all fall within the realm of nursing practice.

Research has indicated that nurses spend relatively small amounts of time providing supportive care for women in labour (McNivin et al., 1992; Gagnon and Waghorn, 1996). Policies and procedures must therefore be put in place that enable nurses to be in the room with women in labour and to provide supportive care. (See section on Assessing the Progress of Labour, p. 15.)

Continuity of Care Providers

It is preferable to minimize the number of care providers, and to provide models of care that ensure that women will experience labour and give birth with at least one familiar professional at hand. Research has shown that women who had the continuity of supportive caregivers have considerably better outcomes in terms of reduced interventions, including reduced rates of lower Apgar scores; fewer intubations and resuscitations; fewer episiotomies; and increased levels of satisfaction (Klein et al., 1983a;b; Klein et al., 1985; Hodnett, 1998b).

Many health care providers practise in groups. *In these situations, communication — with women and families and between providers — is critical.* Health care providers should tell women about the structure of the group and how its members practise. If a woman's primary care provider cannot be present at the birth, mechanisms should be put in place so that the backup care provider has access to the woman's health information and care plan. Women should be given the opportunity to meet other members of the call group whenever possible. When call systems are organized, consideration should be given to balancing the needs for continuity of care against the needs of the professionals for protected time.

Family Participation

A family-centred approach encourages family participation. The woman, herself, should determine the role(s) of each family member. Some family members may want to be present for the birth, while others may want to take on a supportive role. In some cultures, it is important that certain family members be present. Visiting and participation policies should recognize the crucial role of the family and be flexible in meeting the woman's needs for family support. Historic practices, such as arbitrarily or routinely limiting the number of support people in the room, need to be reviewed individually, in light of each woman's needs.

Care During Labour and Birth

The Diagnosis of Labour and Early Labour

The approach to assessment and care in early labour can have a sizable impact on outcomes. It is recommended that women with healthy pregnancies, who are not in active labour, not be admitted to the active labour and birth area. Doing so runs the risk of initiating unnecessary interventions (Morris et al., 1996; McNiven et al., 1998). Indeed, these women are better supported at home, or in a less intensive environment, where comfort measures and nutrition are readily accessible. Women who arrive at the labour unit early in labour usually do so because of a perceived need for support and care. Skilled staff should do an admission assessment and triage in an early assessment room. If possible, this area should not be allocated to women in active labour.

It is important for labour units to develop clearly defined strategies regarding the assessment of the woman and her unborn baby, the diagnosis of labour, the criteria for admission, the type and timing of medical procedures performed in early labour, and the support that is provided to women during this time. The following specific criteria for diagnosing active labour have been recommended (SOGC, 1998):

- cervical dilation of 3 to 4 cm and 80 to 90 percent effacement for women having their first baby; and
- cervical dilation of 3 to 4 cm and 70 to 80 percent effacement in women having subsequent babies.

If the woman is in the latent phase of labour, she needs to be reassured and informed of the situation. The woman may either be discharged home (if this is appropriate for her and her family), or be asked to remain in the triage area or a lounge. Ambulation, comfort measures, nutrition, and hydration are particularly important at this time. *Even at the early stages of cervical dilation, labour pain and anxiety may be intense and some women may require additional care and support* (see section on Pain During Labour, p. 18). This can be provided using various strategies, such as visits at home for assessment and support, or employment of a labour companion or doula.

If the woman is in active labour, she should be admitted to the birthing area. Women in active labour benefit from the continuous presence of a professional. The decision to admit a woman to the labour and birth unit implies that this level of care will be provided until birth.

Initial Assessment

Women are often anxious and frightened when they begin labour and enter hospital (Chalmers et al., 1989). As they welcome and provide support to the family, health care providers must be aware of the fear and anxiety experienced by many women and their companions. The care women receive at this time will have a profound and lasting effect (Green et al., 1990; Simkin, 1991).

In general, a nurse is the first professional to meet the woman. At admission, the nurse has an excellent opportunity to initiate a rapport with the woman and her companions. Admission is the time to review the woman's birth plan, whether written or verbal, with the woman and her partner and to discuss their worries and concerns. It is also the time to inform the woman about the nature and reasons for examinations and procedures. Orientation to the setting and staff organization is especially important if the woman has not had a prenatal tour.

When a woman is entering the birth area, an initial history and assessment is conducted. This assessment includes both the woman and unborn baby's health status, their physical and emotional well-being, the progress of labour, and their individual needs. The history and assessment should be conducted so as not to disrupt the woman or her family.

Sources of information for the history include speaking with the woman, the antenatal record, a previous hospital chart (if available), and the woman's companion (if appropriate). Antenatal records from the physician, midwife, or mother should be available for review. Important elements of an initial history, normally found on the provincial antenatal form, include the following: previous obstetrical history; last known menstrual period; estimated date of birth; any complications associated with this pregnancy; psychosocial history; health problems; allergies; communicable diseases; group B streptococcus and hepatitis B status; and blood type. Health care providers are referred to clinical practice guidelines for the essential elements of the physical assessment of the woman and her unborn baby (AWHONN, 1997; SOGC, 1998).

In some Canadian centres, certain common hospital admission procedures do not benefit the woman, her baby, or her companions. Based on available evidence, it is recommended that the following procedures be abandoned:

- routinely requesting the woman to change into a hospital gown;
- ordering enemas and shaves;
- routinely confining a woman to bed;
- routinely ordering intravenous fluids;
- routinely ordering electronic fetal heart-rate monitoring, including a baseline strip;
- routinely restricting food and fluids; and
- routinely ordering artificial rupture of membranes (ARM)

(Chalmers et al., 1989; Neilson et al., 1998; SOGC, 1998).

Supportive Care

Every woman should be allowed to choose her primary source of social support during labour — be it her partner, friends, or family members. These choices should be respected. However, a professional should also be involved to provide supportive care. Research has shown that the support of the woman in labour by someone of her own choosing is not a substitute for the support provided by a trained midwife or doula (whose only responsibility is to the woman). The support by a trained midwife or doula results in positive outcomes (Hodnett, 1998c).

The effects of one-to-one supportive care to a woman in labour have been well researched and documented in the literature (Health Canada, Canadian Institute of Child Health, 1995). The advantages of trained, supportive lay companions providing one-on-one care to a woman in labour are several: lower cesarean birth rates; decreased use of oxytocin; decreased use of epidural anesthesia; decreased use of analgesia or anesthesia; improved Apgar scores; fewer operative vaginal births; fewer admissions to neonatal intensive care units; and longer breastfeeding durations (Sosa et al., 1980; Klaus et al., 1986; Hofmeyr et al., 1991; Kennell et al., 1991; Wolman et al., 1993). Other randomized trials have shown that women who were accompanied by partners and assigned a midwife during labour received less epidural anesthesia, analgesia, and general anesthesia; had fewer episiotomies; and had a greater sense of control during labour compared with women permitted accompaniment by partners but not assigned midwives (Cogan and Spinnato, 1988; Hodnett and Osborn, 1989a;b; Hemminki et al., 1990; Breart et al., 1992). In environments where nurses are able to spend time at the bedside, as demonstrated in the intermittent auscultation trial, beneficial outcomes have also been observed (Neilson, 1995; Thacker and Stroup, 1995; Gagnon et al., 1997).

Supportive care involves the continuous physical presence of a caregiver. It also encompasses the following elements: physical support (comfort measures such as massages, touch, cool or hot compresses, etc.); emotional support (encouragement, reassurance); informational support (instructions, information, and advice); and advocacy (relaying the woman's or couple's wishes to other team members, acting on the woman's behalf) (Hodnett and Osborn, 1989b; McNiven et al., 1992; Hodnett, 1996, 1998c).

A *supportive environment* is also critical. Here, an emphasis is placed on privacy, quiet, and a minimal number of intrusions. Creating and maintaining a supportive environment for birth requires a multidisciplinary approach involving all care providers and input from consumers; mutual goals can then be identified, implemented, and monitored (Phillips, 1994; Hodnett, 1998a).

Registered nurses should be employed to care for families in the labour and birth areas. The registered nurses' scope of practice fits best with the high level of assessment required — not to mention the potential unpredictability of the course of labour. As already mentioned, when staffing patterns are being planned, an emphasis should be placed on keeping the nurse at the bedside to provide supportive care. *Staffing recommendations entail one-to-one nursing care for active labour and birth, until completion of the fourth stage of labour.*

Hospital administrators should explore creative, flexible methods to ensure that nurses provide effective, supportive care; they should establish policies and standards to support such care. The peaks and valleys in the use of labour units make this a very challenging issue. A policy of on-call, stand-by part-time pools to support the baseline staff complement is thus critical to maternity services.

Other approaches enabling nurses to provide supportive care include the following: promulgation of the idea that such care is of equal or greater value than technical care; establishment of educational courses that teach the art and science of labour support; institution of systems so that recording of care is done in women's rooms; provision of documentation structures for nursing care that promote supportive care; implementation of structural changes, including strategically placed chairs and computers; and elimination of requirements that nurses perform non-nursing and ineffective activities.

At this critical time, it is key that nurses working with families during labour and birth possess the knowledge, skills, and experience to competently care for the mothers and babies. They should have appropriate training, commensurate to the type of women served. (Table 2.3 in Chapter 2 describes a registered nurse's responsibilities when caring for women during labour and birth.) Nurses must be able to access post-RN training programs and continuing education to develop these skills. In fact, agencies need to facilitate the nurses' training and continuing education. Incentives in the form of clinical and salary "laddering" should be explored, and barriers such as pay losses and child care expenses addressed. Such training/ continuing education can take many forms, depending on the region. It can be offered through local community colleges, regional perinatal programs, universities, or in-house programs.

Assessing the Progress of Labour

The normal rate of labour progress varies widely, both in the first and second stages. The many factors influencing labour duration — parity, cervical status at labour onset, status of labour (spontaneous or induced), and presence and type of epidural analgesia — should be considered when evaluating progress.

Ongoing assessment during labour includes the following elements: the woman's well-being and ability to cope; the woman's vital signs; the frequency, duration, and strength of contractions; the degree of pain; the descent, flexion, rotation, and position of the presenting part of the baby; the degree of effacement and dilation of the cervix; the fetal heart rate; the amniotic fluid (colour, odour, consistency); and the vaginal "show."

Nutrition and Hydration During Labour

Although the practice of withholding food and fluid once labour has begun exists in many settings, it has come increasingly into question. The practice is not supported in the literature. Moreover, because all women and therefore all labours are unique, it seems reasonable that no one routine approach to nutrition during labour will suffice. Decisions must thus be made on an individual basis, in consultation with the woman. The question of the appropriate oral intake remains unanswered and, as with many unanswered questions, is ripe for a properly executed controlled trial. Such a trial should look at both the question of eating and drinking in labour and the type of food and drink to be ingested (Sachs et al., 1987; Endler et al., 1988; McKay and Mahan, 1988; Ludka and Roberts, 1993).

Position and Ambulation During Labour and Birth

A policy of encouraging mobilization, particularly in early labour, can potentially facilitate the progress of labour and increase comfort (Nikodem, 1995a). Giving women the liberty to select positions for labour and birth involves few risks and has potential benefits (Nikodem, 1995b).

In general, policies encouraging women to be upright in the first stage of labour have been associated with less pain and fewer administrations of narcotics and epidural analgesia. Moreover, less variability of fetal heart rate has been noted among women encouraged to assume upright, as opposed to recumbent postures. As well, no evidence from clinical trials has shown that upright, as compared to recumbent positions in the first stage yield differences in indicators of neonatal status (Nikodem, 1995a).

Evidence regarding the second stage of labour shows that vertical positions and conventional recumbent or semi-recumbent positions have similar impacts on the length of the second stage, the mode of birth, and the risk of perineal trauma (Nikodem, 1995b). Upright positions, however, tend to be associated with increased risk of labial lacerations. For the few studies reporting on the effects of vertical postures on maternal discomfort, results are inconclusive (Stewart and Spiby, 1989; Crowley et al., 1991).

Several trials, however, have reported an increase in postpartum blood loss as an adverse effect of upright positions during the second stage of labour (Crowley et al., 1991). Intramuscular administration of oxytocin early in the third stage, shown to reduce postpartum hemorrhage, should minimize this risk for women preferring to give birth in this position (Prendiville and Elbourne, 1989).

It is recommended, therefore, that units adopt flexible policies with respect to maternal position in labour and birth, so that women can choose the most comfortable positions. As well, members of the medical and nursing staff should be encouraged to provide care for women who wish to assume non-recumbent as well as recumbent postures. Vertical postures such as standing or walking, sitting, squatting, and kneeling; various reclining positions with back support provided by a person, a wedge, or an adjustable chair; and recumbent positions (supine or lateral-tilt) — all are possible. In effect, women are likely to vary their position intermittently throughout labour; the actual phase of labour may itself dictate the choice of posture.

Fetal Health Surveillance

Fetal health surveillance is the general term for assessing fetal well-being during labour. It is recommended that intermittent auscultation, usually performed using doptone methods, be the preferred method of fetal surveillance for women who have no apparent risk associated with their pregnancy (SOGC, 1995a). The routine use of electronic fetal heart-rate monitoring is questioned; its association with higher cesarean birth rates and a plateau in fetal outcomes has raised doubts (SOGC, 1995a). More specifically, intermittent auscultation techniques need to be taught and appropriately applied in the active phases of labour: every 15 to 30 minutes in the active first stage, and every 5 minutes during the second stage when the woman has begun pushing. In circumstances where non-reassuring fetal heart-rate patterns are discovered on intermittent auscultation, it is appropriate to begin continuous electronic fetal monitoring.

The Society of Obstetricians and Gynaecologists of Canada has recommended specific instances for the use of electronic fetal heart-rate monitoring and fetal-scalp blood sampling. Such situations include prolonged labours; labours augmented with oxytocin; labours in which auscultation reveals non-reassuring information; or labours where there is a particularly significant risk of fetal acidosis (SOGC, 1995a).

A number of studies show that when fetal-scalp sampling is not employed to verify non-reassuring fetal heart-rate patterns (whether by intermittent auscultation or continuous electronic fetal monitoring), the consequence is an increase in the cesarean birth rate without benefit to the fetus. The Society of Obstetricians and Gynecologists of Canada recommends that fetal-scalp blood sampling be considered if non-reassuring fetal heart-rate patterns are encountered (SOGC, 1995a) (See Chapter 2).

USE OF TERMINOLOGY

One of the first rules is to avoid using physiological language to describe conditions that are unknown or speculative. Hence, it is inappropriate, regardless of the method of fetal surveillance, to use the terms "fetal distress," "asphyxia," or "placental dysfunction" when describing the condition of the fetus. These terms should be used only *after* the birth, when the full clinical picture has been established; that is, when the involvement of systems other than the brain has been determined, as well as an adequate blood-gas analysis performed. When expressing concerns about fetal well-being, the appropriate approach is to say that the fetal surveillance provides information that is either "reassuring" or "non-reassuring." Non-reassuring patterns, whether determined by electronic fetal monitoring or intermittent auscultation, demand clarification, followed by action to improve the situation (maternal positional change, oxygen, etc.), or confirmation by fetal-scalp sampling. If these means do not improve the situation to one that is reassuring, the birth must be expedited.

ARE THESE RECOMMENDATIONS REALISTIC?

The document of the Society of Obstetricians and Gynecologists of Canada, *Fetal Health Surveillance in Labour* (SOGC, 1995a), has often been dismissed as unrealistic and impossible to implement, because of financial and staffing limitations. Yet, the evidence for these guidelines is strong enough to insist that all units involved in maternity care should have sufficient staffing to implement these guidelines. In fact, by now, *one-to-one nursing during the active phase of labour should be an essential condition of maternity care in Canada*. Indeed, one-to-one high-quality nursing care is an essential element if intermittent auscultation is to be safely used as the principal method of fetal surveillance. In effect, saying that the provision of nursing care requires the use of continuous electronic fetal monitoring as the method of fetal surveillance is the same as stating, given the present state of knowledge, that a particular unit is prepared to provide inferior maternity care. Clearly, it should be unacceptable in Canada to operate without one-to-one nursing in the active phase of labour, regardless of the method of fetal surveillance.

Pain During Labour

Experiencing pain during labour is a universal feature of childbirth. The degree of pain and each woman's ability to cope with it will depend on a number of different factors. These include the woman's experience; her psychological makeup; the degree of preparation for birth; her cultural beliefs and practices; the quality and strength of uterine contractions; the support she receives during labour and birth; and the position of the fetus (ICEA, 1993; Simkin, 1995).

Many options are available for pain relief during labour. It is important for women to have the opportunity to discuss their preferences and the choices available — from the least to the most interventional — well in advance of their expected date of birth. Informed decision making is thereby facilitated.

COMFORT MEASURES

The majority of women want no pharmacological pain relief, or they may want to delay its use as long as possible. For others, pain medication is preferable. Continuous professional support may be the most powerful non-pharmacological way of managing pain during labour (Hodnett, 1998c).

Integral to a woman's care during labour is the supportive care of her partner and friends, as well as the professional support of a doula/midwife/nurse. The importance and advantages of supportive care are well documented in the literature and include a reduction in use of medication for pain relief (Hodnett, 1998c). Supportive care includes an array of elements: the continuous presence of a caregiver; specific physical comfort measures; encouragement; reassurance; and the provision of information (Hodnett and Osborn, 1989). It is important that the whole "basket" of supportive measures be made available, so that individuals can use them as their needs dictate.

The components of supportive care/comfort measures are varied and wide ranging. Women report touch to be helpful in coping with labour, inasmuch as it conveys caring, comfort, support, and competence (Weaver, 1990). Techniques incorporating touch include counterpressure, usually over the lower back; effleurage; and massage.

Relaxation is the goal of many non-pharmacological pain-control techniques. Psychoprophylactic techniques, which include patterned breathing, controlled vocalization, moaning, and chanting, can enhance relaxation according to Dick-Read et al. (1994). Women trained in psychoprophylactic techniques have been shown to require less pain medication. Visualization-guided imagery or self-guided imagery are other useful prophylactic techniques that involve attention focusing and distraction.

Showers, jacuzzis, and tub baths can all help to enhance relaxation. Immersion in water during the first stage of labour has been linked to decreased use of other pain-relief methods; to date, no significant adverse effects have emerged (Nikodem, 1998). However, tub baths should be used carefully, bearing in mind the following issues. The water temperature for a tub bath should be <39°C to minimize risk (Hall et al., 1990). Women should maintain their oral fluid intake, since diuresis is enhanced while in the tub. Their vital signs should be recorded before entry into the tub and every 30 minutes thereafter. (Fetal heart auscultation in the first stage can be done with a hand-held Doppler or fetoscope.) Finally, each institution should determine its own policies for cleaning and maintaining tubs. Reports have shown a slight increase in maternal temperature and fetal heart rates for 15 to 30 minutes after tub use (Schorn et al., 1993). However, present evidence does not show an increase in maternal or fetal infections attributable to use of hydrotherapy in labour; this includes women with ruptured membranes (Odent, 1983; Lenstrop et al., 1987; Waldenstrom and Nilsson, 1992; Schorn et al., 1993; Rush et al., 1996).

Back pain during labour can be relieved or eliminated by the use of intracutaneous sterile water. The technique involves intracutaneous use of sterile water by raising four papules over the sacrum in specific locations. It can be easily learned by anyone capable of administering a tuberculin skin test. Sterile water, not physiologic saline, should be used. Although the technique does produce transient local pain after the injection, it may reduce the need for more invasive methods of pain relief when used in conjunction with other supportive techniques such as breathing and relaxation (Melzack and Schaffelberg, 1987; Lytzen et al., 1989; Ader et al., 1990; Trolle et al., 1991; Reynolds, 1992;1994).

PHARMACOLOGICAL METHODS FOR PAIN CONTROL

Several pharmacological options are available for the management of labour pain. It is important for health care providers to discuss the benefits and risks of each with women and their families as part of prenatal care. Only then can an informed decision be made.

Narcotics can be administered as an intramuscular (IM), subcutaneous (SC), intravenous (IV), or intravenous patient-controlled analgesia (IV PCA). Narcotic agonists (morphine, meperidine, fentanyl) or agonist-antagonists (nalbuphine, butorphanol) are useful in labour. The IV PCA allows for maternal control of pain within set parameters, while providing more continuous therapy with better drug levels and fewer acute side effects than is seen with larger IM boluses. The drawbacks to parenteral narcotics are several: maternal sedation; nausea and vomiting; incomplete pain relief; hallucinations; respiratory depression; and fetal transfer leading to fetal/neonatal sedation and respiratory depression. The timing of narcotic use is therefore limited, and larger IM/IV doses should not be given within approximately two hours of anticipated birth. The IV PCA is not withheld for the last two hours of labour; however, if used, a qualified person must be present at birth to deal with potential neonatal respiratory depression.

Of all inhaled anesthetics, only nitrous oxide in oxygen (50:50 mix) is used for labour analgesia. Nitrous oxide provides mild analgesic effects. Some of its benefits are psychological; for example, it provides a distraction during contractions. The drawback is that it is useful for short periods only. Thus, it is most beneficial when a woman is close to full dilation, or when she is waiting for other methods of pain relief. Adequate scavenging of gases must be conducted, however, to prevent symptoms appearing in support personnel. The side effects of nitrous oxide include maternal nausea, dizziness, sedation, and hyperventilation/hypoventilation sequences leading to hypoxia between contractions.

Epidural analgesia has been used safely and effectively since the 1960s (Reynolds, 1989). Epidural analgesia for labour provides pain relief combined with preservation of maternal consciousness (Harrison et al., 1987; Howell and Chalmers, 1992). Studies have indicated that women are very satisfied with epidural anesthesia (Robinson et al., 1980; Harrison et al., 1987; Philipsen and Jensen, 1990). However, recent literature has documented its negative effects on the progress of labour and on women's ability to have a spontaneous unassisted vaginal birth, especially among women having their first babies (Howell and Chalmers, 1992).

Epidural analgesia has been associated with an increase in second-stage operative vaginal births, particularly those requiring rotation of the fetal head (Howell, 1992). Epidurals may, in certain clinical contexts, be a risk factor for cesarean births. Further research is required, however, to assess the importance of this possible association. Several approaches have been proposed to minimize the effects of epidurals on labour progress in the second stage: the use of continuous infusions of diluted local anesthetic/narcotic solutions to minimize the motor block (Vertommen et al., 1991); the use of oxytocin to augment labour in the second stage (Saunders et al., 1989); and the use of the delayed pushing technique (Fraser et al., 1997; Vause et al., 1998).

For women having their first babies with epidural analgesia, an approach of delayed pushing for up to two hours after full dilation has been shown to be effective in reducing difficult second-stage births (Fraser et al., 1997). Women whose baby is in the posterior or transverse position are most likely to benefit from this approach.

Recent variations of epidural analgesia include combined spinal-epidural analgesia (CSE) and patient-controlled epidural analgesia (PCEA).

With CSE, the initial phase of analgesia is provided via an intrathecal narcotic with or without local anesthetic. Benefits include the minimization of motor block, and the ability to ambulate during the initial phase. A recent study has shown a decreased duration of first-stage labour with CSE compared to conventional epidural analgesia (Tsen et al., 1999). With PCEA, the total dose of the agents used is minimized. The multicentre randomized controlled trials now under way in Canada and the United States are comparing IV PCA to epidural analgesia in labour, to determine the impact of epidurals on second-stage intervention (Sharma et al., 1997).

When epidural analgesia is available for labouring women, information about its risks and benefits should be made available to all expectant mothers well in advance of their due date; this allows them ample opportunity to consider the technique. It is recommended that epidurals not be considered alone as a first-line approach to pain relief, but instead be reserved for use when other methods, such as the comfort measures described above, prove ineffective. It is further recommended that all health care providers — family physicians, obstetricians, midwives, nurses, and anesthetists — work in close cooperation to optimize women's use of all approaches to pain management. In addition, practitioners at health care centres should develop pain-relief pathways and should make use of pain-measurement scales, such as visual analog scales.

Episiotomy

Given the evidence, the practice of *routine* episiotomy should be abandoned. In fact, research shows that trauma occurs from the episiotomy itself, rather than from the consequences of avoiding episiotomy. In the only North American randomized trial, which involved more than 700 women, the best outcomes were found in women with an intact perineum, followed by those who had spontaneous second-degree tears; the worst outcomes occurred among women receiving an episiotomy or whose episiotomies extended to a third- or fourth-degree tear. As well, women with an intact perineum or spontaneous second-degree tears tended to have less perineal pain overall at one, two, and ten days postpartum; according to the research evidence, this effect persisted until three months postpartum. Moreover, sexual satisfaction after childbirth was enhanced when an episiotomy was avoided.

The evidence shows that women having their first babies are 20 times more likely to have a third- or fourth-degree tear if they received an episiotomy than if they did not (Klein et al., 1992;1994;1995). Since mediolateral episiotomy is more painful than median, and since both are associated with increased maternal morbidity without demonstrable maternal or fetal benefit when employed routinely, both procedures should be reserved for special circumstances; principally, concerns about fetal well-being (non-reassuring patterns) and very limited maternal indications. In fact, both vacuum and forceps can be employed without episiotomy, which should be used only when birth must be expedited because of concerns about fetal well-being. These concepts need not only to be revisited in every hospital, but should be included in medical schools' curricula.

Birth and Immediately Following

The Second Stage of Labour

The second stage of labour has traditionally been defined as the period from full cervical dilation to the birth of the baby. It is important to recognize that labour is a process and that the progress of labour is a continuum. Thus, rather than issuing arbitrary routine directions, health care providers need to be responsive to cues from the expectant mother; at the same time, they must be knowledgeable and aware of the parameters concerning maternal and fetal safety (SOGC, 1998).

The length of the second stage should not be arbitrarily defined. Instead, it should be individualized, so that if there is evidence of progress and the mother's and the baby's condition is satisfactory, intervention need not occur (SOGC, 1998). Traditionally, two hours have been deemed the upper limit of normal for the duration of the second stage of labour in women giving birth for the first time. Recent information indicates that the mean duration of the second stage can be prolonged in light of epidural analgesia use (Paterson et al., 1988; Howell and Chalmers, 1992). It seems that in the presence of an epidural block, there is no association between duration of the second stage and risk of adverse neonatal outcome (Cohen, 1977; Moon et al., 1990; Saunders et al., 1992). Clinicians should therefore avoid placing limits on the duration of the second stage when an epidural block is present. As long as there is continuous progress (as measured by descent of the fetal head), and fetal and maternal status remain satisfactory, expectant management of the second stage is the preferred approach. (See earlier text on epidurals, p. 21.)

Birth and Mother-Infant Contact

As the baby's head emerges, the pressure of the vagina on the infant's thorax causes the baby to start clearing its upper airway secretions. Routine suctioning is not recommended at this point. The baby should be suctioned only if particulate meconium is present in the amniotic fluid, or if the baby has difficulty clearing secretions from the upper airways. In effect, laryngoscopy and intubation should not be performed routinely, but only in the presence of respiratory distress.

Prolonged early contact of the baby with mother and family should be strongly promoted. As soon after birth as possible, the newborn should be placed in physical contact with the mother; for example, on her abdomen or in her arms. Placing the newborn into an infant warmer immediately after birth should be done only if medically indicated for the newborn, if the mother cannot immediately receive the newborn on her abdomen, or if the mother has requested that the newborn be put into a warmer. The warmer should be in close physical proximity to the parents. (If the baby is under the warmer for more than 10 minutes, servo control mechanisms should be used to ensure that the baby is not overheated.)

The mother and newborn should be viewed as an inseparable unit. Disruption of the close mother-infant relationship during the first few hours after birth is to be avoided, and direct skin contact is strongly encouraged. The initial mother-infant bond marks the beginning of all the infant's subsequent attachments. Inasmuch as early events have long-lasting effects, it is formative to a child's sense of security. As well, the benefit to the mother cannot be underestimated, as this early prolonged contact with the baby affirms her sense of accomplishment. Keeping babies and mothers together should be of higher priority than institutional convenience, or adherence to traditional policies. Although specific procedures such as administration of identification bands, vitamin K, or ophthalmic medication may be required for care of the baby (or by law), their execution should be timed so as to minimize the effects on the attachment process. As well, newborn assessments can be done when the baby is with the mother.

Mothers should be encouraged to breastfeed as soon as the baby is ready and willing after birth. Prolonged early contact is a positive predictor of success with breastfeeding. Studies have shown that separation of mothers and infants immediately after birth jeopardizes successful establishment of lactation (CICH, 1996). (See Chapter 6 for a detailed discussion of care of the newborn, including resuscitation. See Chapter 7 for a detailed discussion of breastfeeding.)

Care During the Third Stage of Labour

The usual practice immediately after birth, as long as the uterus remains firm and no unusual bleeding occurs, is to wait watchfully until the placenta is separated. To ensure that the uterus does not become atonic or fill up with blood, behind the separated placenta, the height of the uterine fundus and its consistency should be frequently checked by resting a hand on the fundus (SOGC, 1998).

Evidence from controlled trials supports the routine use of oxytocic drugs in the third stage of labour. However, their advantage — the reduced risk of postpartum hemorrhage — must be weighed against the relatively small risk of hypertension, as well as the disadvantages attending the routine use of injections. In addition, the evidence available provides no support for the continued prophylactic use of ergometrine. This drug offers no advantage over oxytocin in reducing blood loss and is associated with a greater risk of hypertension and vomiting (SOGC, 1998).

Dystocia

At present, no universally accepted criteria for the diagnosis of dystocia exist. One Canadian guideline suggests the following: that 3 cm cervical dilation must have been achieved, and, following this, that there should be a period of at least four hours during which cervical dilation is less than 0.5 cm per hour (Panel of the National Consensus Conference on Aspects of Cesarean Birth, 1986). Compared to alternative definitions, this definition of dystocia has been found to have an acceptable level of sensitivity and a high specificity (Lemay, 1995).

This definition, although relatively conservative, may result in as many as 40 percent of women being labelled as having dystocia. However, given the individuality of the labour process, not all women who go beyond the limits of normality established by this definition will require medical intervention (Peisner and Rosen, 1985;1986).

The *partogram*, a method of documenting vaginal examinations performed at predetermined intervals, is used as a tool for the screening and diagnosis of dystocia. It is not clear, however, that screening via regular vaginal examinations results in improved obstetrical outcomes (World Health Organization, 1994). The partogram can nevertheless be helpful in distinguishing between disorders of the latent and active phases of labour.

The Active Management of Labour

The active management of labour has been advocated as a means of preventing dystocia and reducing cesarean birth (O'Driscoll et al., 1984). This approach to care involves several components, including selective admission to the labour ward, support from caregivers, early amniotomy, and early oxytocin. However, randomized controlled trials of early amniotomy and early administration of oxytocin, although they have resulted in a modest reduction in duration of labour, have not translated into improvements in maternal or fetal morbidity rates. Indeed, routine early amniotomy appears to be associated with an increase in the hourly rate of early, variable, and late fetal heart-rate decelerations, which may lead in turn to increased numbers of cesarean births for concerns regarding fetal well-being (Goffinet et al., 1997). Reports also indicate that if labour is progressing normally, it is preferable to avoid artificial rupture of the fetal membranes (Bidgood and Steer, 1987; Hunter, 1991; Fraser et al., 1993; Thornton and Lilford, 1994; Fraser, 1995a;b).

In contrast, psychosocial support during labour has been shown to be associated with a reduction in cesarean and operative vaginal births, along with improved fetal outcomes (Hodnett, 1998c). Thus, an acceptable approach to care would be expectant management of slow labour progress in the latent phase, with an emphasis on measures of psychological support and physical comfort.

Augmentation of Labour

A recent meta-analysis of trials comparing early labour augmentation with oxytocin and amniotomy to a more conservative form of management found no benefit of routine early intervention for women with mild delays in labour progress (Fraser et al., 1998). In trials that studied women with an established diagnosis of dystocia, a trend toward a reduction in cesarean risk was noted with labour augmentation. However, the number of women randomized in these studies was too small for definitive conclusions to be drawn. For the treatment of dystocia, given the frequency of uterine dysfunction in association with delayed progress in labour (Gibb et al., 1984), it is recommended that augmentation with oxytocin be instituted prior to consideration of cesarean birth.

Medical Intervention for the Treatment of Dystocia

Once the decision has been made to intervene medically for dystocia — whether by amniotomy, oxytocin augmentation, or both — adequate time must be allowed to observe a clinical response to treatment. Depending on the starting dose and rate of increase of oxytocin, two to three hours may be required to achieve therapeutic concentrations in maternal serum (Brindley and Sokol, 1988). In the majority of cases, a therapeutic level is achieved at doses of 10 mU/min or less. Once a therapeutic level has been achieved, a further period of observation is required to assess for a clinical response. Particularly when oxytocin is commenced at cervical dilations of less than 5 cm, the time interval from initiation of treatment to achievement of a clinical response (i.e. an increase in cervical dilation) may be considerable (Cardozo and Pierce, 1990).

Induction

A policy of routine induction of labour at 40 to 41 weeks in healthy pregnancies cannot be justified in the light of evidence from controlled trials (Crowley, 1995a;b). In most cases, post-term pregnancy probably represents a variant of the norm and is associated with a good outcome. When compared to spontaneous labour, however, induction is often associated with a cascade of problems and interventions, such as increases in the mean length of labour, the need for analgesia, and the rate of operative birth.

Induction often requires continuous electronic fetal monitoring, which reduces the woman's mobility. All available methods of induction of labour have associated medical risks. (See Appendix 2.)

The decision to induce labour should be made only when the risk of continuing pregnancy outweighs the risk of induction; for example, in the presence of severe pre-eclampsia. In many other situations, the point at which the risk of continuing pregnancy outweighs the benefit is often not clear-cut.

A post-term pregnancy is the most frequent indication for induction. With recommended ultrasound gestational age assessment, the frequency of gestation of 42 plus weeks should be no greater than 4 percent. A large Scandinavian study provides data on the perinatal mortality risk in relation to gestational age (Bakketeig et al., 1979). Only after 42 weeks does the risk of perinatal mortality return to the level observed before 39 weeks. Moreover, a near doubling of risk occurs after 43 weeks.

A Canadian post-term pregnancy trial demonstrated that the fetal morbidity risk associated with serial antenatal monitoring was no greater than the risk of prophylactic induction of labour. Among the 3407 babies in the trial there were only two instances of perinatal mortality; both were in the expectant management group (Hannah et al., 1992). In a meta-analysis of 12 trials comparing expectant management to induction of labour in post-date pregnancies, reported in the Cochrane database (Crowley, 1998), eight perinatal deaths occurred, seven of which were in the expectant management group. This analysis suggests that a policy of labour induction at 41 plus weeks may be associated with a slight reduction in the risk of perinatal mortality. However, even if this were the case, many inductions would have to be performed to prevent one case of perinatal death.

A reduction in the risk of cesarean births was observed in association with a policy of labour induction in the Canadian post-term trial. This finding appears to contradict the prevalent view that induction increases the risk of cesarean births. However, this observation should be interpreted with caution. For one thing, a prostaglandin gel was available only to women in the induction group: the approximately one third of those in the expectant group who went on to induction did not have access to gel. As well, most of the excess of cesarean births in the expectant management group were due to "fetal concerns." Whether the use of amnioinfusion in situations of fetal concern due to oligohydramnios would have reduced or eliminated this difference is open to speculation.

In light of the evidence, the Cochrane database recommends offering women induction of labour by the best method available (Crowley, 1995b). However, if women are to make an informed decision about induction, they must be informed of the risks and benefits of the procedure.

Reducing the Incidence of Cesarean Births

The current rates of cesarean births in Canada are considered unacceptably high. The challenge today is how to safely reduce these rates while preserving optimal infant and maternal outcomes. Studies from across North America have shown no links between high cesarean birth rates and improved perinatal mortality. In fact, some jurisdictions with the highest cesarean birth rates have the highest perinatal mortality rates, illustrating that social factors and aspects related to the organization of care are critical determinants. Individual hospitals and individual practitioners with high rates of cesarean births do not have higher or lower numbers of admissions to special care (baby) units in their practices, and the babies born have neither higher nor lower Apgar scores, than those institutions or practices with low rates. In fact, within any large group of practitioners, intervention rates for cesarean births and other principal procedures tend to follow a bell-shaped distribution.

All the usual reasons given for the high cesarean birth rate — the overdiagnosis of "fetal distress," the overdiagnosis and suboptimal management of dystocia, the overuse of repeat cesarean births, and the use of cesarean births for breech and multiple births — are well known to the practice community, and attempts are under way to improve practice in these areas. Research on changing clinician behaviour and practice clearly demonstrates that exhortation, continuing medical education, rounds, and various quality assurance or disciplinary approaches generally fail. In fact, Continuous Quality Improvement (CQI) methods have been the most successful approaches to date. (See Appendix 3 for details on CQI.)

Family-Centred Care During Cesarean Births

The experience of cesarean birth, either elective or emergency, provokes anxiety for most women and families. A number of options, however, can be made available to facilitate a family-centred cesarean birth. These are summarized in Table 5.1.

Table 5.1 Options to Facilitate Family-Centred Cesarean Births

- Admit the woman to hospital for an elective cesarean on the morning of the birth, so that family members can spend the previous night together (provided they have already had an orientation).
- Enable father/partner/support person to remain with the mother during the physical preparation.
- Choose regional anesthesia where possible, and explain the differences between regional and general anesthesia.
- Enable father/partner/support person to be in the cesarean birth room in non-emergency situations. (There is controversy regarding the support person's presence during emergency situations. Further evidence is needed to assess this area.)
- Provide a mirror and/or ongoing commentary from a staff member for mother and family.
- Enable photographs or videos to be taken, if even one parent is unable to witness the birth.
- Free the mother's hands from restraint, thereby allowing contact with her partner and the baby.
- Provide the opportunity for both parents to interact with the baby in the cesarean birth room and/or the postanesthetic recovery room.
- Provide the opportunity for the mother to breastfeed in the cesarean birth room or the postanesthetic recovery room.
- If father/partner chooses not to be in the cesarean birth room, replace him/her at the mother's side with a support person. Give the father/partner the baby to hold en route to the nursery. Have the staff describe the birth experience to the father/partner.
- Have the father/partner accompany the baby to the nursery and remain with the infant until both are reunited with the mother.
- Reunite the family in the postanesthetic recovery room, if possible.
- Ask the father/partner to be in the postanesthetic recovery room to tell the mother, if she has had a general anesthetic, about the birth.
- If it is difficult to reunite the family in the postanesthetic room, judge each mother's condition individually with an eye to reuniting the family as soon as possible.
- Judge the baby's condition individually to avoid time alone in an incubator in the nursery, whenever possible.
- Provide time alone for the family in those first critical hours.
- Institute mother/baby combined-care nursing as soon as possible and do not routinely separate mothers and babies.
- Include the family in the teaching of caretaking skills.
- Include siblings according to their and the family's wishes.

Adapted from: Phillips CR, *Family-Centered Maternity and Newborn Care: A Basic Text*. 4th ed. St. Louis, Mo.: Mosby, 1996.

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APPENDIX I

Birth Plan

Introductions

My name is .... *My due date is* ....

My doctor is .... *My baby's doctor will be* ....

My support person(s) during labour will be ....

These people will be present for the birth ....

....

We would like to have our other children visit...

☐ during labour

☐ after I go to the mother-baby unit

☐ not at all

We have attended or are planning to attend...

☐ prenatal classes

☐ Dad classes

☐ hospital tour

☐ sibling tour

☐ exercise classes

I am part of this research study: ....

Getting to Know You...

Is there anything you would like us to know about you (i.e. important issues, fears, concerns)? ....

....

....

....

My goal is:

☐ to use supportive and comfort measures offered by support person and nurse only

☐ to use pain medications in addition to supportive and comfort measures

☐ other, please explain ....

....

....

First Stage of Labour... Coping with Contractions

Women have found the following comfort measures helpful when coping with the discomforts associated with contractions. Please check which of the following comfort measures you would like your nurse to offer you during your labour...

☐ tub bath/jacuzzi/shower

☐ walking

☐ hot/cold compresses

☐ listen to my own music

☐ use the birthing ball

☐ use my own "focal" point

☐ wear my own clothes/night wear

☐ use many pillows (must bring your own)

☐ massage

☐ use of Nitronox (self-administered combination of two gases)

☐ an epidural

☐ other: ....

The Birth of Your Baby

Your nurse will help you to find different, comfortable positions during the pushing stage of your labour. Which of the following would you also like to try:

☐ use the squatting bar

☐ give birth on my side

☐ do *not* want to use stirrups

☐ other ....

....

....

After my baby is born, I would like to:

☐ have .... cut the umbilical cord

☐ have my baby put on my stomach right away

☐ have the baby wrapped in a blanket before holding

☐ have our own bonnet put on the baby

☐ have .... diaper my baby for the first time

☐ have .... take pictures/video during the birth

☐ other ....

....

Unexpected Labour Events

If you need more information about any of the following topics, ask your doctor or midwife:

☐ external fetal monitoring

☐ internal fetal monitoring

☐ artificial rupture of membranes

☐ forceps/vacuum extractor

☐ episiotomy

☐ cesarean birth

☐ induction of labour: use of cervical foley catheter and syntocinon

---

After the Birth of Your Baby Until You Go Home

The obstetrical unit believes in keeping mothers and their babies together 24 hours a day; nursing staff will support and help you care for your baby in your room.

I am planning to:

☐ breastfeed

☐ formula feed

During my stay on the mother-baby unit, I would like to:

☐ have my baby with me all the time

☐ be a part of my baby's examinations (admission and discharge)

☐ be present during any tests my baby may be having (i.e. PKU/TSH heel prick blood test)

☐ have the nurses show me and .... how to do a baby bath

☐ give my baby's first bath on my own

☐ have .... give the first baby bath

☐ have our baby boy circumcised

☐ other ....

....

After going home these people will be helping:

....

....

Additional ideas or comments: ....

....

....

....

....

I would appreciate a telephone follow-up call after I go home from the mother-baby unit. (First-time moms usually receive a phone call from the Public Health Nurse after they go home.) ☐ yes ☐ no ☐ undecided

Date ....

Mom's signature ....

☐ Dad's ☐ Support person's signature ....

Source: St. Joseph's Health Centre, Family Birthing Centre, London, Ont.

APPENDIX 2

Methods of Induction and Augmentation

"SWEEPING" THE MEMBRANES

Several recent studies suggest that for women who have a non-urgent indication for induction of labour, a "sweeping" of the membranes may increase the likelihood of spontaneous labour onset. A randomized clinical trial is under way in Canada to assess if a policy of membrane sweeping for such women would reduce the requirement for formal induction of labour.

CERVICAL RIPENING — USE OF PROSTAGLANDINS

Oxytocin, while effective for labour induction, is ineffective for cervical ripening. Prostaglandins (PGE^2) have been demonstrated in clinical studies to be effective medications for cervical ripening. Prostaglandins act directly on the cervix; their effects are not solely mediated by uterine contractions. Prostaglandins result in biochemical changes which lead to a softening of the cervix. Intracervical PGE^2 is currently the preferred method for cervical ripening.

A meta-analysis reported in the Cochrane database compares prostaglandins (all routes) to placebo or "no treatment" for cervical ripening (Keirse, 1993). Prostaglandins for cervical ripening produced a statistically significant reduction in the rate of cesarean births, instrumental vaginal birth, and failed induction. The proportion of women who had not given birth within 12 hours of commencing labour induction was dramatically reduced when the cervix was prepared with postaglandins. Although there was some risk of both hyperstimulation and fetal heart abnormality associated with the use of prostaglandins for cervical ripening, the risk of neonatal compromise did not appear to be increased. Approximately 30 to 40 percent of the women receiving intracervical PGE^2 are expected to go into labour during the process of ripening.

COMPARING OF METHODS OF LABOUR INDUCTION

For women with a favourable Bishop score (Bishop, 1964), whether achieved spontaneously or by medical means, several options are available when induction is necessary: amniotomy alone, oxytocin alone, amniotomy and oxytocin, oral prostaglandins (PG), or vaginal prostaglandins. Amniotomy alone would appear to be an attractive approach in some situations. However, controlled trials suggest that early administration of oxytocin following amniotomy reduces the risk of operative birth compared to amniotomy.

The controlled trials evaluating different medical approaches to induction tend to involve small sample sizes. Again, meta-analysis provides an indication of the relative effectiveness of the different approaches. Trials have compared oxytocin to oral prostaglandins and oxytocin to vaginal prostaglandins. (There have been no direct comparisons of oral to vaginal PG.) Gastrointestinal side effects (vomiting and diarrhea) are more frequent and severe with oral prostaglandins than with vaginal, making their acceptability lower.

Overall, prostaglandins (any route) appear to result in a reduction in the frequency of operative births when compared to oxytocin alone. The proportion of women not giving birth within 24 hours is significantly reduced (odds ratio = 0.43). The frequency of analgesic use is reduced with PG as compared to oxytocin.

There have been few studies concerning women's views of induction methods. It appears likely that if vaginal gel allows the woman to delay or avoid insertion of an IV drip, greater mobility might result and acceptability might be increased. The subsequent use of electronic monitoring in labour should depend on the indication for induction.

The occurrence of ruptured membranes is noted as a contraindication to the use of Prostin vaginal gel in the product monograph. However, the protocol of the randomized trial that examined term premature rupture of membranes (PROM), and that compared expectant management to induction of labour in patients with term premature rupture of membranes, required administration of a vaginal gel. Several published controlled trials suggest that vaginal gel can be used safely in these situations.

APPENDIX 3

Continuous Quality Improvement (CQI)

Continuous quality improvement (CQI) focuses on the system of care. It is concerned with improving the processes and reducing variation so that everyone's performance improves (Headrick, 1995). A basic tenet of CQI is that most people care about the quality of their work and want to do a good job. Improvement usually requires removing the barriers in the way of the providers who already possess the intrinsic motivation for high quality. This is quite different from traditional quality assurance programs, which focus on identifying outliers ("bad apples") and taking steps to improve their performance in order to meet an established standard.

Audits and feedback (central tools of the CQI process) have been shown to affect rates of birthing interventions when combined with appropriate education and administrative support (Inglesis, 1991; Dillon et al., 1992; Socol et al., 1993; Sandmire and Demott, 1994; Reynolds, 1995).

The CQI process is designed to provide practitioners with feedback about their practice patterns. Basic to this is the notion that for all interventions, even cesarean births (though obstetricians are generally the principal intervenors), the physicians or midwives hold themselves accountable for the intervention or outcome, as do, for their part, the obstetricians, nurses, and anesthetists. Individualized feedback is presented in the form of a series of histograms examining interventions such as episiotomies, cesarean births, epidurals, inductions, augmentations, and consultation rates across the department. A survey, which accompanies the results, invites practitioners to provide directions for the project, indicate educational issues needing attention, and make comments about the process. A similar process involving an entire institution should be multidisciplinary and institution-wide.

Detailed flow diagrams of the process of care and consensus building complement other CQI strategies and can be applied to contributing factors, such as admission procedures, inductions, pain management, strategies in early labour, and fetal surveillance. An audit is carried out on randomly selected charts from hypothesized areas thought to be at the root of the problem. Teams are then formed and educational issue areas developed.

Each group uses a template to lead it through the major steps for completing a clinical algorithm and/or pathway for its area of focus, as well as a time line for implementation. The objectives for each group are to complete the analysis of baseline evidence; review the literature; and identify existing clinical algorithms, guidelines, and pathways. The group then designs an improvement process based on this information. Implementation of the results of this work will involve disseminating information through the care provider population, allowing for feedback, and ensuring that everyone feels part of the process. Recommendations will then be made, incorporating key data markers in the chart abstraction process.

— CHAPTER 6 —

Early Postpartum Care of the Mother and Infant and Transition to the Community

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Introduction

The postpartum period is significant for the mother, baby, and family for two important reasons. First, it is a time of physiological adjustment for both mother and baby. Second, it is a period of important social and emotional adjustment for all players.

Thus, the goals of care during the postpartum period are to:

- promote the physical well-being of both mother and baby;
- support the developing relationship between the baby and his or her mother, father, and family;
- support the development of infant feeding skills;
- support and strengthen the mother's knowledge, as well as her confidence in herself and in her baby's health and well-being, thus enabling her to fulfil her mothering role within her particular family and cultural situation; and
- support the development of parenting skills.

The early days following childbirth are formative for the new mother, baby, and family. Certain fundamental needs and basic services are required for adjustment during the postpartum period, regardless of whether the birth venue has been the hospital, a birth centre, or home. These fundamental needs and basic services are:

- *rest* and recovery from the physical demands of pregnancy and the birth experience;
- assessment of the physiological *adaptation* of the mother and baby and prevention of problems;
- *support* of the mother, baby, and family during the period of adjustment (by family members, social contacts, and/or the community at large);
- *education* of the mother (and family members) in aspects relative to personal and baby care; and
- completion of specific prophylactic or *screening* procedures organized through the different programs of maternal and newborn care, such as vitamin K administration and eye prophylaxis, immunization (Rh, rubella, hepatitis B), testing (PKU/thyroid), prevention of Rh isoimmunization, and assessment of safety and security (e.g. car seats, potentially violent home situations, substance use).

Postpartum Care Immediately After Birth and During Early Postpartum

During the immediate postpartum period as well as the early days postpartum, care and support must be equally balanced among three critical areas: assessment, monitoring, and support of the baby's health and well-being; assessment, monitoring, and support of the mother's physiological and emotional adaptation following birth; and support of the developing mother-infant and family relationships. These three areas of care are equally important and the challenge is to accomplish all three. Facilitating the family's being together, while maintaining and promoting the health of the mother and baby, can be affected by applying the following principles of family-centred care:

- Women need to be cared for within the context of their families. Mothers and infants are to be cared for as a unit, and should not be separated unless absolutely necessary.
- Family-centred maternity and newborn care is based on research evidence, with technology to be used appropriately.
- Women and their families need knowledge about their care so they can make informed choices.

Maintaining Parent-Infant Contact

During the immediate postpartum period, the mother and newborn, within the context of their family or personal support, should be viewed as a unit. Whenever possible, disruption of the close parent-infant relationship during the crucial few hours following birth is to be avoided; meanwhile, direct physical contact between the baby, mother, and father is strongly encouraged. The parent-infant bond — the first step in the infant's subsequent attachments — is formative to a child's sense of security and has long-lasting effects. Indeed, the benefit to the parents should not be underestimated: this early physical contact with the baby affirms their sense of accomplishment and promotes their self-confidence as parents. Keeping babies and parents together should clearly be of the highest priority. Institutional policies can at times restrict this contact, so flexibility should be the guiding principle.

At the time of birth, certain policies and practices can help initiate the attachment process. For example, skin-to-skin contact between mother/ father and baby should be encouraged; babies should be examined and cared for within the parents' range of vision; and babies should have the opportunity to breastfeed during the first hour after birth (see Chapter 7). Whereas continued contact between parents and baby is a positive predictor for successful breastfeeding, separation from parents after birth jeopardizes successful lactation. During the immediate postpartum period, parents need undisturbed time to inspect, explore, and begin to recognize their baby.

Assessment and Care of the Mother

In the vast majority of cases, the immediate postpartum period is a time of joyful celebration for the family. It is a time for the family and health care providers to share and celebrate their hard work and achievements. But it is also a time of significant physiological adaptation for both the mother and baby; as such, it is a period requiring careful assessment, monitoring, and, at times, intervention.

Women have unique and varied immediate responses after giving birth. Some feel excited, uplifted, and energetic. Others are exhausted and want to sleep. A woman's experience will depend on a number of factors: the length of her labour, its degree of difficulty, her experience of pain during labour, and whether or not she had an operative or cesarean birth. In addition, a determining factor will be the woman's actual experience of labour and birth compared with her expectations of these events.

As well, women experience significant physical adjustments in the immediate postpartum period; involving all of their body systems, they require a significant expenditure of energy. The adjustments include losses in circulating blood volume, diaphoresis, weight loss, and displacement of internal organs. Women's immediate care requirements often centre on the need for hydration, for food and rest, and for energy replenishing.

A woman can lose from 250 to 500 mL of blood at birth without undesirable effects because of the increased blood volume during pregnancy. However, excessive bleeding contributes to postpartum morbidity and can lead to maternal death. Early postpartum hemorrhage — defined as blood loss of 500 mL or more following separation and expulsion of the placenta within the first 24 hours after birth — occurs in four percent of all women giving birth. Clearly, a very careful evaluation of the uterine fundus height and firmness, vital signs, and amount of vaginal bleeding postpartum is extremely important. Labour and birth units should have guidelines to manage postpartum hemorrhage.

A thorough, immediate, and ongoing physical assessment of the mother is guided by her unique history and situation. In all cases, however, it includes an assessment of:

- vital signs
- uterine tone
- lochia
- fundal height
- condition of perineum
- bladder function
- breasts and nipples
- bowel function
- physical comfort.

The findings of this assessment should be documented according to the clinical judgment of the caregiver or the policy of the institution. Appropriate action should be taken if abnormalities are detected.

Assessment and Care of the Baby

Immediately following birth, the baby's optimal transition to life outside the uterus will require the:

- establishment of effective respiration and circulation;
- maintenance of an adequate body temperature; and
- facilitation of contact between the baby, mother, and family.

It is a critical transition time for the baby. Assessment and monitoring are therefore crucial.

An initial examination of the baby in the birthing area is important to ensure that he or she is adapting appropriately to the extrauterine environment. This is also an opportune moment to examine the baby more completely, thereby reassuring the parents. Adaptation to the extrauterine life should be assessed by a careful examination of the baby's respiration, heart rate, perfusion, and colour. Axillary temperature, respiratory rate, and heart rate should be measured every hour for two hours (or longer if abnormal). Careful attention should be paid to the possibility of congenital abnormalities.

Temperature regulation is a critical part of the baby's transition to life outside the uterus. In utero, the unborn baby relies on placental blood flow for survival and on the mother for dissipation of excess heat and for thermal regulation. At birth, the infant is wet and the room temperature is lower than the intrauterine environmental temperature. Heat loss occurs rapidly through evaporation, radiation, convection, and conduction, with the body temperature decreasing at a rate of 0.2° to 1°C per minute. Glycogen and brown fat stores may become depleted in just a few hours. The adrenergic response to falling temperature may result in peripheral vasoconstriction, which may impair pulmonary gas exchange and cause tissue hypoxia and acidosis.

It is recommended that the following approaches to avoiding heat loss be used:

- maintain the birth area at 23° to 25°C, with a draft-free environment for the baby;
- dry the baby and remove wet linen to avoid evaporative and conductive heat loss;
- place the baby on the mother's abdomen or in her arms, with skin-to-skin contact, to enhance conductive heat transfer from mother to infant;
- bundle (cover the head as well) to prevent exposure to cold air as well as decreased convective and evaporative heat loss and to provide insulation and increased heat retention; and
- have an external radiant heat source on hand for use as required.

Assessment and support of infant feeding in the immediate and early postpartum period are also critical. See Chapter 7 for information regarding breastfeeding. Instruction should be given to women who are bottle feeding so that they can feed their babies confidently.

ASSESSMENT OF RISK IN THE NEWBORN

After the newborn infant is examined in the birth area, the history and physical findings should be reviewed to ascertain the likelihood of the infant being at increased risk for problems. This assessment is extremely important, not only in influencing the baby's future care but also in ensuring that the infant is observed in an appropriate setting. If after initial resuscitation the infant is not well or requires specialized observation, it may be necessary to arrange for transfer to an intermediate, special, or intensive care area or to a tertiary care facility. Every birthing facility should have written guidelines for such transfers.

Individuals caring for babies immediately after birth should provide care in a way that recognizes the possibility of problems, even without obvious risk factors. Certain findings, however, have been linked to an increased risk of problems in babies. These are described in Appendix 1. The list should not be considered exhaustive. It should be noted, too, that institutions need guidelines for the newborn assessments required, and for the location of the baby when specialized newborn observation is required.

NEWBORN RESUSCITATION

Even after a healthy pregnancy, some infants, a few minutes after birth, may experience sudden, unexpected difficulties that require immediate intervention by skilled personnel. This situation is frightening for the woman and her family. It is crucial that health care providers provide support, offering the woman and her family information and explanations. It is critical, too, that personnel skilled in neonatal resuscitation and able to function as a team be available for every birth. Clearly, the size and composition of this team will vary with the birth rate and designated level of care of the birth location. This team may include nurses, family physicians, midwives, pediatricians, obstetricians, anesthetists, and respiratory therapists. Aside from the professional person responsible for the birth (i.e. the physician or midwife), a second professional should be present with primary responsibility for the baby. That second professional should be able to perform neonatal cardiopulmonary resuscitation (CPR), ventilation with a bag, and mask and chest compressions. If this person cannot perform more extensive resuscitation (using endotracheal intubation and medications), someone with these skills should be available in the facility to assist immediately when called.

Each birth area should define the risk factors indicating when two people dedicated to the baby's care are needed at the birth. In fact, until another member of the medical staff takes over, care of the infant remains the responsibility of the obstetrician/family physician/midwife who attends the birth. To effectively exercise this responsibility, the obstetrician/family physician/midwife should be registered as a current provider of neonatal resuscitation. Skills in neonatal resuscitation are obtained through the Neonatal Resuscitation Program (NRP) coordinated by the Canadian Paediatric Society (CPS) and the Canadian Heart and Stroke Foundation

(CHSF). Registration at either the provider or instructor level and periodical reregistration are essential for all personnel who may care for babies immediately after birth. Institutions should be supported in their efforts to provide on-site programs to achieve this goal. The requisite resuscitation equipment is described in the American Pediatric Association/American Heart Association *Textbook of Neonatal Resuscitation* (Bloom and Cropley, 1994). This equipment should be checked daily to ensure proper functioning; it should be rechecked before each birth as well.

SPECIFIC INTERVENTIONS

Vitamin K administered intramuscularly is the most effective method of preventing hemorrhagic disease of the newborn. The following dose should be administered intramuscularly within six hours of birth, following initial stabilization of the baby and an appropriate opportunity for mother (family)-baby interaction: 1.0 mg vitamin K_1 for babies greater than or equal to 1500 g birth weight; and 0.5 mg for those less than 1500 g birth weight. Oral administration of vitamin K is not recommended because it is less effective in preventing late hemorrhagic disease of the newborn (CPS, 1997). If parents refuse intramuscular administration for their baby, health care providers should recommend an oral dose of 2 mg of vitamin K_1 at the time of the first feeding. The parenteral form of vitamin K for oral administration is all that is currently available. This dose should be repeated at two to four weeks and at six to eight weeks of age. Parents should be advised of the importance of the baby receiving follow-up doses and be cautioned that their infants remain at increased risk for late hemorrhagic disease of the newborn (including the potential for intercranial hemorrhage) using this oral regimen (CPS and CFPC, 1998).

All babies should receive a prophylactic against ophthalmia neonatorum, except for those very premature babies whose lids are fused at the time of birth. (In some provinces, this procedure is mandated by law.) It is recommended that each eye be treated with a 1-cm ribbon of 0.5% erythromycin ointment. Erythromycin, which protects against gonococcal infection, may offer some protection against chlamydial conjunctivitis. Erythromycin may be less irritating to the eyes than silver nitrate and avoid the theoretical risks of tetracycline. The eyes should not be rinsed with saline. Treatment may be delayed for up to two hours after birth to enable parent-infant contact and initial stabilization of the baby.

If the mother is Rh negative, or known to be sensitized to other antigens, the Rh group of the cord blood and direct antiglobulin tests should be performed shortly after birth. At the time of birth, it is recommended that a segment of the cord be clamped and set aside to allow for umbilical artery and/or umbilical vein blood-gas analysis. Such information indicates the fetal-placental response to labour in terms of respiratory and metabolic function (SOGC, 1995).

Combined Mother/Baby Postpartum Care

After birth, if the mother and baby are stable, they need to be attended by the same designated health care provider until the first feed has been successfully completed. Thereafter, intermittent care in hospital, home or office visits will be provided in accordance with clinical judgment and program policies.

For hospital stays of longer than a few hours, whether or not the mother and baby remain in a labour/birth/postpartum/recovery area or are transferred to a postpartum unit, it is recommended that combined mother/baby postpartum nursing care be provided.

Combined mother/baby postpartum care involves one nurse who cares for both a postpartum mother and her newborn, and the presence of the baby and mother in the same room 24 hours a day. Combined mother/baby postpartum nursing care, also known as dyad care, is a nursing strategy that promotes the family's role as primary caregiver for the newborn. Both physiologically and psychologically, the newborn and postpartum mother are viewed as an interdependent couplet (Phillips, 1997). This type of nursing care combines the roles of nursery and postpartum nurses so that one nurse can give complete care to the mother/baby dyad. As well, mother/baby nursing provides infant care at the mother's bedside, guides and teaches parenting skills, attends to the mother's physiological and psychological needs, and integrates other family members into this care (Phillips, 1996). In other words, "combined mother/baby postpartum nursing can be defined as the provision of safe, quality health care which recognizes, focuses on, and adapts to the physical and psychosocial needs of the new mother, the family, and the newborn. The emphasis is on providing maternal and newborn care that fosters family unity while maintaining physical safety" (Phillips, 1996).

In the combined mother/baby postpartum nursing care model, health care providers examine babies at the mothers' bedsides. Parents are encouraged to ask questions freely and to discuss concerns with the physician, nurse, or other mothers. The health care team in mother/baby nursing strives to capitalize on opportunities for the mother to inspect, assess, and learn how to care for her own baby. The nurse functions as a resource person to the mother, providing guidance and suggestions, assistance when needed, and positive reinforcement. Neither the father (or main support person) or siblings are viewed as visitors and can therefore be with the mother and baby as desired (Phillips, 1996).

The key words when implementing mother/baby care are *attitude* and *flexibility*. Some staff members, fearing loss of control, may be anxious about the additional learning required. Indeed, successful implementation of mother/baby care will require staff members to perceive their roles somewhat differently. Instead of placing an emphasis on tasks to be completed by the nurse, the mother/baby nurse has to value caring for the family as a whole and to promote parent success with all caretaking activities (Phillips, 1996).

When hospitals provide combined mother/baby care, or when babies are cared for in a nursery because they have special needs, a written policy and plan should be in place. This will facilitate the newborn's security as well as describe staff procedures in case of problems.

The Mother's Continued Adaptation, Assessment, and Care

Researchers have commented on the general predictability of the phases experienced by mothers throughout the postpartum period. As a rule, these researchers are quick to point out that the postpartum period actually involves the fourth and fifth trimesters of the maternity process, and that to abandon a mother too soon, leaving her without the support of health professionals, can contribute to a multitude of psychological and physical problems (Rubin, 1961;1975; Hans, 1986; Health Canada, 1989). Since the postpartum period is an important transitional time for the new mother, her baby, and the family as a whole, being sensitive to the way a mother is dealing with these changes will help her and family members cope.

During the first two to three days following birth, the mother will "take in" her experiences of labour and birth by actively reviewing and discussing them. A large proportion of women indicate that they cannot remember certain events connected with their labour or birth, that they often find themselves thinking about what they cannot remember, and that they want information about what they cannot recall (Alfonso, 1977). In addition, two features of childbirth can make it potentially traumatizing: extreme pain, and a sense of loss of control. Potential deleterious long-term sequelae of these experiences are beginning to be recognized, and the evidence of a type of "post-traumatic stress disorder" following a traumatic birth is compelling (Reynolds, 1997). It is important, therefore, for health care providers to assess the possibility of a woman having difficulty adapting to her new role as a mother, and to provide the appropriate support, care, and referral. (See Reynolds, 1997, for specific care guidelines.)

Mothers move from the "taking in" phase to the "taking hold" phase over a few weeks. In this latter phase, they gradually move toward increased independence, taking charge of the new relationship as they care for the baby. Over the next several months, the mother moves through the phase of "letting go," during which she develops more confidence and control and integrates her new baby, and her new role, into her everyday experience. Appendix 2 describes these phases and the woman's needs as she moves through these developments.

As women and families progress through the phases of postpartum adaptation, they encounter many learning needs. To develop feelings of competence and confidence about the postpartum period, learn ways of coping with a new baby, develop the skills and knowledge required for their new parenting roles, and integrate the "new" baby and "new" mother into a "new" family — these become their new goals.

Health care providers can assist in this process by facilitating the necessary learning and development via a learner-centred approach. In such an approach, the emphasis is on health care providers as educators; by recognizing the validity of the background and experience of both the woman and her family, the providers help both parties feel able to handle their own situations. In this context of empowerment, the focus is on sharing control of both the content (what the clients should know) and the process (how they will learn it). This approach underscores interdependence in the learning situation. Health care providers should know where the mother sees herself within the context of her postpartum experience. They should know how to work with her, by meeting her learning needs and thereby facilitate her development.

Five principles anchor the facilitation of a learner-centred approach. They are outlined in Table 6.1.

Table 6.1 Principles for Facilitating Postpartum Learning

Setting a comfortable climate for learning

The postpartum period is a time of both positive and negative stress. As a learner-centred facilitator, it is important to encourage clients, by whatever means, to feel comfortable during this intense time.

Sharing control of both the content and the process

Clients need to participate in making decisions about what they want to learn. If nurses recognize something that a particular person may need to know, but as yet remains unidentified, they should help make it easier for that individual to learn it.

Building self-esteem

A mother's progress through the postpartum phase is closely related to her own self-esteem. If she is feeling good about herself and her ability to handle the situation, she will likely move along well and become more independent. Nurses can encourage self-esteem in all family members by confirming that their responses to the entire birthing process are legitimate and that other people have experienced similar reactions.

Ensuring that what the parents learn applies to their home situation

To integrate new information into the context of their own situations, parents need to apply it, practically, in day-to-day life.

Encouraging self-responsibility

As a mother works through the phases of postpartum, she gradually becomes more responsible for her new status, her new baby, and the new family situation. One way to ease her move through these phases is to help her to feel comfortable with her present phase. Once she believes that she is "okay" and that her emotional and physical responses are within a normal range, she will find it much easier to think about taking on new tasks and responsibilities.

Source: Health Canada, *Postpartum Parent Support Program: Implementation Handbook,* 1989.

It is recommended that health care providers base their assessment of, and response to, the client's learning needs on an adult education approach. For assessing learning needs, the *Postpartum Parent Support Program: You and Your New Baby: A List of Questions* is recommended (Health Canada, 1995). The *Postpartum Parent Support Program: Reference Manual* provides support for staff members trying to respond to a family's questions (Health Canada, 1993). (See Companion Documents.)

The Infant's Continued Adaptation, Assessment, and Care

Observation of the Newborn

Transitional nurseries have existed in hospitals for many years. However, healthy newborn infants do not need observation in a transitional nursery. The goals of the transitional period of the newborn infant's life — stabilization and assessment — can be achieved at the mother's bedside. Staff with appropriate training will naturally be required.

Until discharge, the baby's temperature, respiratory rate, and heart rate should be recorded — at a minimum, daily. Some babies may require more frequent measurements. Voiding and stooling should also be assessed and recorded. Parents can be encouraged to assist in this process of observation and assessment.

It is important to assess the baby at least every six hours for appearance and behavioural states: skin colour, breathing, levels of activity and feeding. These observations should be made while the baby is with the parents, thus providing an opportunity for parental education.

The baby should have a complete physical examination within the first 24 hours of birth, as well as within 24 hours before discharge from hospital. In some situations, babies have very short hospital stays; this may mean that only one examination occurs in hospital. However, a second examination should occur within 48 hours of discharge from hospital by a qualified health care provider (CPS, 1996a). These examinations should be documented in the infant's chart. Physical examination of the newborn should include measurements of the head circumference, hips, length, and weight. It is recommended that the examination of the baby be conducted with parents present. This provides health care providers with an opportunity to reassure the parents as to the baby's normalcy, and to communicate any special needs or concerns requiring follow-up.

SKIN AND CORD CARE

Newborn babies are bathed primarily for esthetic reasons. Such bathing should thus be postponed until thermal and cardiorespiratory stability is ensured. The health care provider should bath the baby using lukewarm water and either no soap (especially soaps containing hexachlorophene) or a mild, non-medicated soap.

The literature suggests that tub bathing, as opposed to sponge bathing, can be done without significantly lowering the infant's temperature or increasing rates of cord infection (Henningsson et al., 1981; Anderson et al., 1995). One study found that babies who were tub bathed cried less. (These studies were conducted with babies whose temperature had stabilized for one hour.)

A tub bath should be used to help remove blood. Drying of the baby and removal of blood after birth may minimize the risk of infection caused by hepatitis B, the herpes virus, and the human immunodeficiency virus. Specific benefits of this practice remain unclear, however. Until the infant has been thoroughly bathed, universal precautions should be used when handling the newborn.

The relative values of triple dye, bacitracin ointment, alcohol, and natural drying vis-à-vis cord care are not clear enough to allow for a single recommendation to be made. Recent evidence indicates no difference in outcomes when the cord is cleaned with alcohol versus natural drying (Dore et al., 1998). It is essential, however, that the cord be initially cut with a sterile instrument. As well, the cord and surrounding skin area should subsequently be watched for potential omphalitis. Any agents used to clean the infant's skin or cord should be single-use, thereby preventing cross-contamination with other babies. Policies regarding cord care should be examined on the basis of emerging research.

CIRCUMCISION

Given the overall evidence that the benefits and harms of circumcision are so evenly balanced, the Canadian Paediatric Society decided not to recommend circumcision as a routine procedure for newborns (CPS, 1996b). The Society recommends that parents making a decision about circumcision should seek advice as to the current state of medical knowledge concerning its benefits and harms. The parents' decision may ultimately reflect their personal, religious, or cultural factors.

The evidence shows a strong need for pain control when circumcision is performed. Appropriate attention should therefore be paid to pain relief (CPS, 1996b).

After circumcision, it is important that parents understand how to care for and clean their baby's penis. They need to recognize the signs of healing, as well as the signs of complications such as bleeding or infection.

IMMUNIZATION

A baby whose mother is HBs Ag (hepatitis B surface antigen) positive should receive hepatitis B immunoglobulin (0.5 mL intramuscularly) as soon as possible after birth, followed by initiation of hepatitis B immunization. Even if the mother is HBs Ag negative, consideration should be given to vaccinating babies who may be at increased risk of exposure due to HBs Ag positive household members. Although not the current practice in Canada, routine initiation of hepatitis B immunization during the newborn period may be beneficial. BCG immunization should also be considered if exposure to communicable tuberculosis is expected in the home.

NEWBORN SCREENING

Each newborn baby should enter a neonatal screening program that includes, at a minimum, screening for hypothyroidism and phenylketonuria. Before birth, parents should be informed of the purpose of all anticipated screening tests. Screening programs are designed to ensure not only that all babies are screened in accordance with the current recommended practices and legislation, but also that normal, and especially abnormal, results are communicated appropriately to both health care providers and parents. Timely initiation for care of the baby and support for the families is thus ensured. In situations of early discharge from hospital, the screening should occur before discharge, unless such screening can be ensured after discharge within the necessary time limits.

Hearing loss is estimated to occur in 1.5 to 6.0 per 1000 live births. Babies who are at increased risk for hearing loss may have screening completed in their place of birth. Alternatively, appropriate arrangements should be made within the first three months of life. Factors associated with increased risk of hearing loss include:

- family history of childhood sensory hearing loss;
- congenital infections such as cytomegalovirus, rubella, syphilis, herpes, or toxoplasmosis;
- cranial facial anomalies with abnormalities of the pinnae or ear canal;
- birth weight less than 1500 g;
- hyperbilirubinemia requiring exchange transfusion;
- exposure to ototoxic medications, especially aminoglycocides used in multiple courses or in combination with loop diuretics;
- bacterial meningitis; and
- perinatal asphyxia with hypoxemic encephalopathy.

Current information does not support routine screening of blood pressure, blood glucose, or hematocrit for all newborn babies. However, babies at increased risk of abnormality should be appropriately screened. This could include screening for blood pressure shortly after birth, blood glucose, and/or hematocrit at three to four hours of age.

Examples of infants at risk include:

- infants of diabetic mothers and babies who are large for their gestational age;
- babies who are small for their gestational age;
- premature infants;
- infants with perinatal asphyxia or signs of encephalopathy;
- infants with cardiorespiratory distress;
- infants with possible sepsis;
- infants of multiple gestation; and
- infants born to isoimmunized mothers.

Assessment of Complications Related to the Mother

Postpartum Blues, Depression, and Psychosis

POSTPARTUM BLUES

Postpartum blues, or baby blues, are experienced by 45 to 80 percent of postpartum women (Misri, 1993). Common symptoms are insomnia, sadness, mood changes, tearfulness, fatigue, headaches, poor concentration, and confusion. These symptoms are usually transient: beginning on the third or fourth day after birth, they last one to two weeks and then disappear without treatment.

Women with postpartum blues frequently do not know why they feel depressed, will talk of feeling “silly,” and will laugh through their tears. As well, many are disappointed that they feel “fat,” tired, and generally unlike the beautiful, well-groomed new mothers on television or in the movies. These women think that they are failures because they are not perfect. Some feel disappointed that their labours and births did not go as planned. Inadequate emotional support received from their partners or extreme stress caused by new mothering responsibilities are other contributing factors.

These women need to talk, cry, and work through their feelings. Health care providers should explain the derivation of "the blues" and reassure these women. It is essential that women understand that other women experience postpartum blues, that perfect mothers exist only in fairy tales. Family members can help by showering the mother with attention. Unfortunately, it is not unusual to find them all admiring the baby, while the mother is left alone (Stewart and Robinson, 1993).

POSTPARTUM DEPRESSION

Ten to twenty percent of women experience postpartum depression during the first year after birth. Usually, it begins within two weeks to six months of birth. Although a form of clinical depression, it is not psychotic in nature. Common symptoms are periods of excessive crying, feelings of despondency and guilt, emotional lability, anorexia, insomnia, feelings of inadequacy, poor self-esteem, inability to cope, social withdrawal, and concern about "not loving the baby." The many physical symptoms include impaired concentration, irritability, poor memory, and fatigue (Robinson and Stewart, 1986; Stewart and Robinson, 1993; Pearce, 1997).

Many women go to great lengths to conceal their postpartum depression from families and friends because they feel it is not "motherly" or socially acceptable. To date, no hormonal abnormality has been identified, despite long-standing beliefs that hormonal changes are responsible. At greater risk are women who have previously suffered from depression or who have had a difficult pregnancy with emotional problems. Poor family or marital relationships and upsetting life events may contribute as well. The literature reports on the usefulness of screening tools to help identify women who are at risk for, or actually suffering from, postpartum depression (Cox, 1989; McIntosh, 1993; Schaper et al., 1994; Beck, 1995b).

Referral to a mental health professional and the treatment of postpartum depression professionally are important care components. The impact of depression on both the mother and her developing relationship with her new baby can have serious, long-lasting effects (Beck, 1995a). Supportive treatments include self-help groups, respite care, home assistance, counselling, and coaching regarding interacting with her infant. As well, psychotherapy may help to resolve the woman's conflicts about motherhood and her role. Some women may benefit from information about parenting; others may benefit from marriage counselling and homemaking support. Often, severe depression that does not respond promptly to psychotherapy can be eased by antidepressant medication. The new antidepressants usually do not cause drowsiness, allowing women to participate fully in child care (Stewart and Robinson, 1993). Controversy, however, is linked to the use of antidepressants and breastfeeding, and most listings warn that they should be "used with caution." (See CICH, *National Breastfeeding Guidelines for Health Care Providers*, 1996.)

The outcome of postpartum depression in women who are treated appropriately is good — approximately 65 percent recover within a year. Research indicates that postpartum depression is often not identified despite the frequent contact that women have with health care professionals during the first year postpartum (Cox et al., 1987; Misri 1993; Beck 1995b). It is recommended that health care professionals use screening tools, such as the Edinburgh Postpartum Depression Scale (Cox et al., 1987) to assist in identifying women at risk for postpartum depression (Schaper et al., 1994).

POSTPARTUM PSYCHOSIS

Postpartum psychosis, the most severe form of postpartum depression, may become apparent anywhere from two to three weeks after birth, to as long as six to twelve months thereafter. It is relatively uncommon, the incidence being estimated at one or two per 1000 women giving birth. However, it is a very dangerous psychosis, to both mother and baby, given the presence of both suicidal and infanticidal thoughts. The mother is out of touch with reality; she may have delusions and/or hallucinations, severe disorganization of her thinking, and difficulty coping with the care of her baby; she may also be confused and dreamy (Misri, 1993; Stewart and Robinson, 1993).

The illness often begins suddenly and may present as a profound depression, mania, schizophrenia, or severe confusion. Women who have had bipolar affective disorder, or have a close relative who has had this disorder, are at higher risk of developing postpartum psychosis. Despite numerous investigations, no hormonal abnormality has been found in women with postpartum psychosis.

Women with postpartum psychosis should be cared for under close supervision in hospital, preferably with their infants. However, because these women have impaired judgment, they should not be left alone with their infants. The best treatment is usually a combination of psychosocial support and psychopharmacological therapy. With treatment, the outlook for women with postpartum depression is very good — 95 percent improve within three months.

Late Postpartum Hemorrhage

Although less common than early postpartum hemorrhage, late postpartum hemorrhage can occur in up to one percent of women giving birth. It appears after the first 24 hours following birth, usually at seven to fourteen days. The causes of late postpartum hemorrhage are retained fragments of the placenta or membranes, subinvolution of the uterus, and infection of the uterine lining. Women should be advised of the signs of hemorrhage, and asked to call their health care provider if vaginal bleeding increases significantly and/or they pass large clots. Treatment involves controlling the bleeding, usually with oxytocin, and blood replacement and surgical intervention as required.

Even a moderate blood loss at birth may result in anemia, commonly defined as a hemoglobin of less than 10 g. Most cases of anemia can be corrected with a course of oral iron. Women with anemia should be monitored by a health care professional.

Puerperal Infection/Endometritis

A puerperal infection is an infection of the reproductive tract that is associated with childbirth; it can occur any time from birth to six weeks postpartum. Endometritis, the most common infection, is limited to the uterine cavity but can spread. In mild endometritis, a woman will have discharge that is scant or profuse, bloody, and foul smelling. In more severe situations, she will have fever, chills, lower abdominal pain or uterine tenderness, anorexia, lethargy, and rapid pulse. Treatment includes rest and Fowler's position to promote drainage, a high fluid intake, administration of antibiotics, analgesia as needed, and administration of oxytocics to keep the uterus contracted (Phillips, 1996). Comfort measures are important to relieve the symptoms. Women should be advised to call their health care provider if they develop symptoms of puerperal infection such as fever, pain/tenderness, foul-smelling vaginal discharge, or difficulty urinating.

Assessment of Common Complications in the Newborn

Cardiorespiratory Distress

Cardiorespiratory distress in the newborn may occur in the birth area or later, during the hospital stay. All hospital personnel caring for newborn babies should be able to assess respiratory distress, cyanosis (detection possible on the mucus membranes of the lips and mouth), and skin perfusion. In an emergency, any caregiver should be able to improve oxygenation and provide adequate ventilation. Specific resuscitation procedures may follow neonatal resuscitation program guidelines after birth and/or be modified for use in other areas of the hospital. Each hospital should have an identified emergency-response team capable of initiating such procedures for newborn infants according to a defined protocol. (Chapter 2 of this document addresses attendance by a physician for further evaluation and care.)

Facilities providing supplemental oxygen to babies for periods of more than four hours should also have the capacity to monitor and regularly record environmental oxygen concentration and to assess oxygenation of a baby by means of pulse oximetry, transcutaneous PO_2, and/or arterial gases. As well, all centres should have personnel capable of initiating assisted ventilation, at least with manual ventilation techniques. The capacity to provide continued respiratory assistance usually requires a Level III service. Each facility caring for mothers and newborns should have a written policy related to initial care of the baby with respiratory distress and, if a Level I or II facility, a working relationship established with another referral centre to which the baby may be transferred for continuing care.

Hypoglycemia

Hypoglycemia in the newborn baby is defined as blood glucose of less than 2.2 mMol/L during the first 72 hours of life and less than 2.5 mMol/L thereafter. Babies at risk (see Appendix 1) should be screened for potential hypoglycemia via measurement of blood glucose prior to a feed, or as otherwise clinically indicated. Infants who are symptomatic or those with more severe hypoglycemia (blood glucose of less than 1.7 mMol/L) should receive an intravenous infusion of 2 mL/kg D10W over five minutes, followed by an intravenous infusion of glucose at 6 to 8 mg/kg/min (e.g. D10W at 90 mL/kg/24hrs). Because indicator strips only approximate blood glucose levels, it is important to confirm the abnormal values determined with indicator strips by measuring blood glucose in the laboratory, using conventional methods. Treatment, however, should be initiated while awaiting results.

Fluid Balance

For the normal, healthy term baby, the ability to breastfeed should be assessed as described in Chapter 7. Supplemental feeds to minimize dehydration are not routinely required. Ninety-nine percent of babies will void in the first 24 hours of life. Failure to void adequately (at least three times daily during the first two days and six times per day subsequently) may indicate dehydration, which may be confirmed by identification of weight loss and examination of the anterior fontanelle, skin turgor, and skin perfusion. It is important that parents learn the signs of dehydration before leaving the hospital or birth centre (see Chapter 7).

Healthy term babies need not be routinely weighed on a daily basis. However, sick newborn and preterm infants would normally be cared for in a neonatal intensive-care unit where fluid balance should be monitored via measurements of fluid intake and output, daily weight, and biochemical measurements.

Jaundice

The most recent guidelines of the Canadian Pediatric Society (CPS), "Approach to the Management of Hyperbilirubinemia in Term Newborn Infants" (CPS, 1999) should be consulted for information on the clinical investigation and treatment of jaundice.

Hyperbilirubinemia in otherwise healthy newborn infants continues to evince a potential threat of bilirubin encephalopathy. However, careful assessment and judicious use of phototherapy will result in optimal outcomes. Phototherapy remains an effective therapeutic intervention that decreases bilirubin concentrations, thereby preventing bilirubin levels associated with permanent sequelae.

Table 6.2 outlines the tests for the investigation of a jaundiced infant. Figure 1 shows the levels of bilirubin at which phototherapy might be initiated in healthy term infants and those with risk factors. If the infant is a healthy term newborn, phototherapy should be started as indicated in the upper curve of Figure 1. If the infant has one or more risk factors, a clinical decision may be made to initiate phototherapy at the level indicated by the lower curve.

Table 6.2 Laboratory Investigation for Hyperbilirubinemia in Term Newborn Infants

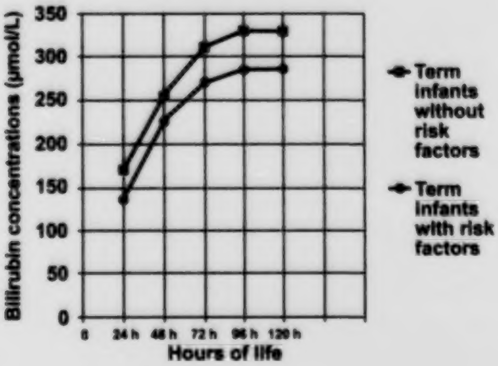
Indicated tests (if bilirubin concentrations reach phototherapy levels)

- Serum total or unconjugated bilirubin concentrations
- Serum conjugated bilirubin concentration
- Blood group with direct antibody test (Coombs)
- Hemoglobin and hematocrit determinations

Optional tests (in specific clinical circumstances)

- Complete blood count (CBC), including manual differential white cell count
- Blood smear for red cell morphology
- Reticulocyte count
- Glucose-6-phosphate dehydrogenase screen
- Serum electrolytes and albumin or protein concentrations

Figure 1 Revised Guidelines for Initiation of Phototherapy in Neonatal Hyperbilirubinemia in Term Infants with Risk Factors and in Healthy Term Infants



Some risk factors include a gestational age of fewer than 37 weeks, birth weight less than 2500 g, hemolysis, jaundice occurring at less than 24 hours of age, sepsis, and the need for resuscitation at birth.

Source: Canadian Paediatric Society (CPS). Approach to the management of hyperbilirubinemia in term newborn infants, *Paediatrics and Child Health*, 1999.

Dehydration contributes significantly to increased serum bilirubin levels and may be exacerbated by phototherapy. All jaundiced infants should be adequately hydrated before and during phototherapy. Breastfeeding is not contraindicated for the jaundiced infant undergoing phototherapy. In many cases, more frequent breastfeeding should be encouraged.

Health care providers are referred to the CPS guidelines for other aspects of caring for the infant undergoing phototherapy. Indications pertaining to consultation or consideration of exchange transfusions are included therein, as well.

If the baby is discharged home early, appropriate follow-up must be in place to monitor the bilirubin concentrations as required. Although home phototherapy may be available in some centres, readmission of healthy term infants with their mothers, to hospital, may be required.

The Newborn at Risk for Sepsis

Group B streptococcus is a leading cause of neonatal infection. It is recommended that the most current guidelines of national bodies, such as the CPS, the Society of Obstetricians and Gynaecologists of Canada (SOGC), and the Centers for Disease Control (CDC), be consulted when developing policies and protocols for management of the mother and baby.

For specific guidelines regarding other infections, health care providers are referred to the 1994 edition of the *Report of the Committee of Infectious Diseases*, American Academy of Pediatrics (Redbook). (See Companion Documents.)

Substance Use

Infants exposed to drugs, chemicals, and solvents in utero should be observed for signs of developmental anomalies and neonatal abstinence syndrome. This observation should most commonly occur while the baby is with the mother, although babies with demonstrable abstinence symptoms may require treatment and care in a specialized neonatal unit. These signs are often present at, or soon after, birth, but may not be evident for a few days. Assessment tools should be used to identify the common neonatal abstinence signs: sweating, tremulousness, irritability, and a high-pitched cry. Health care professionals should seek collaboration with community agencies, public health units, and other child-serving organizations to provide safe, appropriate care and follow-up for the parents and infants after discharge from hospital.

Postpartum Assessment and Care After Cesarean Birth

Mothers and families who experienced a cesarean birth as an emergency, or after a long and difficult labour, have special needs. They may be experiencing depression, anxiety, guilt, loss of control, less satisfaction with the birth experience, and even loss of self-esteem. Mothers and families who undergo planned, scheduled cesarean births can sometimes use coping mechanisms to prepare for the surgery. Women undergoing an unplanned cesarean birth do not have this preparation time (Phillips, 1996).

Health care professionals can help the new mother and her family work through and resolve feelings about the operative birth, particularly if it was unplanned. Hospitals and other agencies need to develop support systems or support groups for women following an emergency cesarean birth.

For the entire hospital stay, in addition to regular postsurgical care, a daily postpartum assessment should be done. This includes assessment of the woman's breast and nipple condition, the amount and character of her lochia, and the height and consistency of the fundus; inspection of the abdominal incision and extremities; and assessment of her voiding. Cesarean birth does not preclude combined mother/baby care. Primarily because of discomfort, mothers may need extra help with breastfeeding, especially during the first few days. Family support is imperative after the operative birth. If the baby is kept in a special care nursery, the mother and father should go to the nursery whenever possible. Because unplanned separation from siblings remaining at home can be traumatic, they should be encouraged to visit. It is vital that women and families understand what to expect during the recovery period. They need to comprehend the importance of rest, fluids, and adequate diet for recovery. Most women will need extra help at home.

Transition to Home and Community

Introduction

Mothers face many common issues in the early days following birth. Isolation, fear or insecurity about infant care, breastfeeding, where to go for help, role adjustment, fatigue, coping with siblings or partners, body image, nutrition, and the need for peer support — all must be dealt with.

Programs, protocols, and procedures for maternal and newborn care in hospitals and communities are generally organized around these basic needs. Many variations exist, depending upon input from parents in the program-planning process, provider preferences, geographical settings (urban/rural, north/south, isolated areas), unique population variables, and available resources. Consumer, hospital, and community agency collaboration is vital to the success of a healthy transition to family life with the new baby.

While some prenatal childbirth preparation programs include an orientation to the postpartum period, not all mothers have access to, or attend, such sessions. With the focus of the prenatal period commonly centred on the birth itself, parents often find it difficult to take in information about the postpartum period. As a result, new parents may experience a certain amount of anxiety as they adjust to parenthood. Planning for the postpartum period should, however, begin during the prenatal period. Written documentation, discussions with caregivers, and prenatal classes should include the following information:

- description of community philosophy of care;
- outline of hospital facilities and practices;
- determination of length of hospital stay;
- listing of community resources for new parents: health agency visiting professionals, phone lines for new parents ("warmlines/hotlines"), breastfeeding support programs, parenting groups, library and recreation centre resources, shelters, foodbanks;
- description of ways in which families and friends can support the new family: preparing food in advance, initiating phone contact, assisting with the care of siblings, providing opportunities for rest;
- outline of special services for families at risk (health or social);

- summary of availability of financial resources and emergency support; and
- instructions about accessing help from available resources.

Community support services, both professional and peer, vary by region. While typically a function of resource allocation, values, and mandates of community services, the trend to shortened hospital stay has energized professionals and consumers. Strategies for community support programs have resulted — their goal being to assist in the prevention of postpartum problems and to enhance maternal and newborn adjustment.

Outcomes or Indicators of Postpartum Adjustment

Professionals have developed a number of methods — written standards of care, care plans, maps or paths, "managed" care, among others — to assure that maternal and newborn criteria for health and adjustment are observed during the early days postpartum, both in hospital and at home. Criteria, also called "indicators" or "outcomes," include specifics about the mother, the neonate, and the social or home support system of the family. Certain outcomes will be achieved during the family's hospital stay; others will be achieved at home.

MOTHER

Two sets of criteria — physiological and emotional — are used to judge the mother's progress. The physiological outcomes include the following indicators:

- normal hemoglobin, no fainting or dizzy spells;
- satisfactory ambulation;
- decrease in colour and amount of lochia by day three to five, no foul odour or itchiness;
- firm, midline, contracted uterine fundus;
- at least one voiding prior to hospital discharge, bladder feels empty following voiding, no painful urination;
- resumption of normal bowel function: bowel movement by day two to three (vaginal birth) or day three to five (cesarean birth);
- vital signs within normal limits;
- healing of the perineum (i.e. no excessive redness, pain, induration, or swelling);
- well-approximated skin edges (from episiotomy, tear, incision);

- soft and supple nipples;
- breasts soft (day one to two) and filling (day three to four), fullness evident, engorgement controlled;
- lactation established; and
- pain controlled by oral medication.

The emotional adjustment includes the following outcomes. The mother:

- indicates knowledge of whom to call when in doubt or need (friends, family, community resources, health care professionals);
- has discussed the events of her birth experience;
- demonstrates the beginnings of confidence in basic baby care;
- demonstrates an attachment to the baby;
- has not expressed (or observed) feelings of profound unhappiness regarding the birth or her role;
- indicates that she feels safe when at home; and
- is able to sleep or rest between infant feeds.

NEWBORN

Two sets of criteria — physiological and safety — are used to judge the newborn's progress. The physiological outcomes include:

- vital, stable signs within normal limits;
- established feeding status: infant feeds at least eight times in 24 hours, is content and sleeps between most feeds. Prior to hospital discharge, at least two feeds have been managed independently (latched on, suckled well) or arrangements have been made for referral, support, and follow-up;
- no jaundice in the first 24 hours;
- meconium stool within the first 24 hours of life;
- functioning bowel movements (two to six per day);
- regular urination: one to two wet cloth diapers per day in the first three days (occasional brick red staining is normal); six or more wet cloth diapers per day by day four to six; urine is pale yellow and odourless;
- metabolic screening completed, or arrangements made to have it done; mechanism in place for reviewing results;
- if circumcision is to occur, mother knows who to call if neonate has not voided within eight hours of procedure, or if there is bleeding or signs and symptoms of infection; and
- no more than 7 percent loss of birth weight within the first week.

The safety outcomes include:

- indication by the parent that a regulation crib and car seat have been obtained (see Health Canada, 1998; Canadian Motor Vehicles Safety Standards [CMVSS], Transport Canada.). Car seat inspection at time of hospital discharge elicits a "CMVSS" sticker, indicating that the requisite safety standards have been met. (Referral should be made to local automobile associations for details, or to the Transport Canada information line at 1-800-333-0371.) The infant is seen to be dressed appropriately and appropriately harnessed and positioned in the car seat;
- demonstration by the parent of ability to feed, clothe and nurture the infant; and
- indication that referral or follow-up will identify the professionals' concerns regarding potential parent isolation, lack of parental competence/confidence, violent home situation, or neglect.

MATERNAL AND NEWBORN SUPPORT OUTCOMES

The following indicators are used to assess the support available:

- evidence that the parent has a "fixed" address, or documentation of an address where the mother will be staying following hospital discharge;
- evidence of referral to community services for identified needs regarding breastfeeding, parent education, home safety issues, potential violent home situation, and parent social support;
- evidence that phone contact or a professional home visit has been arranged if hospital stay is less than 48 hours;
- evidence that the mother has arranged for follow-up assessment with a qualified health professional, both for the newborn (within one week) and herself (within six weeks);
- evidence that the mother knows how to obtain emergency help, support, and parent information (This could include written information. [See Appendix 3 for an example.] Chapter 7 has information for breastfeeding mothers.);
- evidence that family, friends, or other resources have been identified as support for the mother; and
- evidence of identification and follow-up for history of parental mental health problems, previous child abuse, and substance use.

Community Support Strategies

Increasingly, postpartum care and a successful transition to the community are being seen as central to promoting healthy new beginnings for the family and to preventing early maternal and newborn morbidity. Creative strategies have been developed to help the mother prepare herself and her home for the inevitable stresses after the birth. Although the strategies vary, the underlying issues relate to:

- infant feeding
- infant care and protection
- adequate rest
- obtaining help when needed
- education and learning
- social and financial needs.

The following listing elaborates on the strategies now considered by communities when planning for successful maternal and newborn transition to the community.

Prenatal Hospital "Visit" Programs. Modelled after preoperative ambulatory clinics, these programs are based on the belief that seeing mothers in the prenatal period can be of value in assisting them to plan for the birth and early postpartum periods. The prenatal visit can include learning about community resources; identification and documentation of needs for breastfeeding support, social work intervention, and/or care options during childbirth and postpartum; preparation of items for the newborn (regulation cribs and car seats); familiarization with the hospital environment; and development of a plan for postpartum learning. Documents are kept with the prenatal file at the hospital and used upon admission and for community referral, thus reducing duplication and enhancing continuity of care. Copies of the information and planning forms should be carried by the mother; she can then share them with health care providers and refer to them as necessary.

Phone Lines. Many communities have initiated special phone lines, often called "warmlines" or "hotlines," with specific telephone access numbers for new parents. Parents can thus ask questions, day and night, about personal and infant health issues. Questions usually relate to breastfeeding, infant crying, coping at home, and community resources; general reassurance is often needed. Phone lines can be connected to hospital postpartum wards or run under the auspices of public health units, parent organizations, La Leche League, or medical centres.

Professional Home Visits. A traditional follow-up component of maternal and newborn care is the home visit by either a nurse or midwife. The professionals traditionally organize their observations of the mother, newborn, and family around basic postpartum needs. The length and frequency of visits vary according to the needs of the family and the program specifications. Home visit referrals are made by the hospital or community liaison staff, or by the mother herself; often, they are governed by the "urgency" rating of the assessed need. In some areas, home visiting has been discontinued or replaced with options entailing visits by the mothers to a professional service. As well, some hospitals have initiated home follow-up by their childbirth staff for mothers in need, as identified by risk criteria or need for additional support. For mothers without a telephone, a visit within 48 hours of discharge is suggested. It is also recommended that mothers and babies who are discharged before 48 hours after birth should have a home visit by a qualified health care professional within 48 hours of discharge (CPS, 1996a).

Early Phone Follow-up. A phone call from public/community health nurses or hospital nurses to the mother, within 24 to 48 hours of hospital discharge, can ensure that the postpartum plan is in place and working well. Specific outcomes can be screened, relating to infant feeding and maternal and infant well-being. The telephone interview may result in a referral to a community service for intervention, such as a home visit.

Postpartum Clinics. Usually staffed by nurses, postpartum "clinics" are geared to mother/baby drop-ins or scheduled visits. The clinic program can be structured for health assessment, episodic problem solving, referral, support, or advice. All clinics should have easy access in terms of parking, with the requisite modifications for persons with disabilities. Areas are needed for family privacy.

Physician Follow-up. Follow-up assessment by the physician or other competent health care professional is recommended — within seven days of discharge for newborns, and within six weeks for mothers. Scheduling earlier visits to the physician will depend on general maternal and newborn health; complications of pregnancy, birth, and the postpartum period; and available family/community supports.

Community Maps. As parents, people need to visualize their community with new eyes. A street map of the town — prominently displayed in postpartum areas and health care providers' offices, and liberally "dotted" with selected parent resources — is a popular, user-friendly aid. The map should be surrounded by phone numbers, grouped under such headings as breastfeeding services, legal services, food banks, libraries, parent groups, literacy resources, immigrant services, clothing exchange centres, public health units, home care agencies, and "warmlines." Other resources unique to the area should be listed as well.

Breastfeeding Clinics or Centres. One of the new mother's most important needs relates to help with breastfeeding. Clinics provide skilled staff, often certified lactation consultants, to assist with problems and questions.

La Leche League. A non-professional support group for breastfeeding mothers, La Leche League (LLL) involves experienced mothers dedicated to helping others learn the art of breastfeeding. Most telephone books contain the telephone number of the local chapter. In some communities, a LLL representative will, upon request, make hospital visits.

Parenting Classes/Groups. As was the case in prenatal classes, some parents will benefit from group discussions of parenting concerns during the early postpartum period. Indeed, some prenatal classes will organize reunion classes to bring parents together again — this time with their babies.

Another successful initiative has been parent-to-parent support programs involving paid staff and/or volunteers. These have proved especially valuable for new immigrants, or for those having English or French as their second language, who may need help in accessing the health care system.

Electronic Communication/Information. Fax and electronic communication are useful tools for expediting referrals between agencies. As well, agencies should collaborate in developing parent information packages, accessible via the Internet or the community Freenet. These information packages are valuable to both professionals and parents. Some communities have well-advertised direct-dial telephone information messages for common questions or problems experienced by parents in the early postpartum period. All resources should be developed at the appropriate literacy level and in the appropriate languages of the community.

Other Strategies. To fulfil the need for maternal rest, some community follow-up services have added homemaking and Meals-on-Wheels services to their package. These can be put in place with or without professional services, depending on the identified need of the mother. When available as an option, about 10 percent of mothers will request homemaking services.

Some public health units or home care agencies will send laboratory technicians or nurses into the home to perform blood tests (bilirubin, PKU/thyroid, hemoglobin). This strategy is especially effective in supporting programs requiring early hospital discharge. For example, home phototherapy programs can be initiated as an alternative to hospital readmission for hyperbilirubinemia. In many communities, rental depots for such items as car seats or breast pumps have proved successful.

Length of Hospital Stay

Over the past two decades, postpartum hospital stays for mothers and babies have seen a dramatic decline — going from four to five days in the 1970s to the current norm of one to two days. Reports of early discharge programs depict their evolution as a response to the philosophy of family-centred maternity care and mothers wishing to leave hospital sooner than usual. For well-supported mothers who fulfil specified criteria (generally a normal pregnancy and birth at term) and who desire a short hospital stay, a set of home services was coordinated, replacing hospital program activities pertaining to assessment, support, and parent education. Such hospital-community collaborative programs incorporate criteria checklists, care plans/maps/outcomes, written community referral forms, and an array of community-support strategies and parental evaluations.

Outcomes of community-supported "early discharge programs" have identified these programs as safe, satisfying, efficient, and economical for their users. Data have been positive on such variables as maternal and newborn physical health, adjustment, hospital readmission rates and breastfeeding (CICH 1996; CPS, 1996a; Dalby et al., 1996; PEPEO, 1996; SOGC, 1996a). The programs' success rests on the following factors:

- parental choice/involvement in the decision concerning length of hospital stay;

- appropriate screening vis-à-vis defined criteria of health for the mother, the newborn, and the family support system;
- a strong community-support component for contact/follow-up, teaching, problem solving, and assessment; and
- professional staff, experienced in maternal and newborn care and in community health, working within the conceptual framework of family-centred maternity care.

Administrative mandates may give rise to a non-voluntary, short hospital stay. In this instance, concerns may relate to infant readmissions, breastfeeding failures, parental coping concerns, and maternal dissatisfaction. Clearly, it is important to emphasize coupling short stays with planned community support strategies and programs, as defined above.

It is the mother who should decide the length of hospital stay, based on her individual needs. In effect, there is "no place like home," and the program for care should be flexible in attending to the new family's needs and preferences.

Collaboration between hospital maternal and newborn committees, community agencies, and consumers in developing programs dealing with length of stay and follow-up is essential. Current guidelines for hospital discharge go beyond physical health parameters: evidence is needed of the family's resources for postpartum support or of referrals based on individual need (see SOGC [1996a] and CPS [1996a] for criteria for discharge prior to 48 hours). A comprehensive program of early discharge/community support should include written information for parents, detailing signs of health and/or postpartum problems, where to access help, and surveillance of hospital readmissions. Materials must always be developed at appropriate literacy levels, using pictures as much as possible. As well, materials must be available in languages appropriate to the community. If programs involve discharge of mothers and babies fewer than 48 hours after birth, it is recommended that they be assessed by a skilled, knowledgeable professional within 24 to 48 hours after discharge. A personal assessment in the home is preferred for all mothers and babies, since travelling by new families to a clinic or office may pose undue difficulties (CPS, 1996a; SOGC, 1996a).

Hospitals and community health agencies should evaluate their postpartum services. Surveillance of hospital readmissions, client satisfaction, and data regarding breastfeeding are useful measures of program effectiveness.

Hospital to Community Referral

To ensure consistent and continuous care, use of check-off information sheets initiated by the hospital staff or liaison staff should be mandatory. The mother should be provided with a copy for use by the community professional; another copy can always be faxed to the agency office. Table 6.3 outlines the essential elements of the referral form.

Table 6.3 Essential Elements of Hospital/Community Referral Form

Identifying Data

- mother's full name, age, address, and phone number; partner's name (and relationship); temporary address, if applicable
- last name of the newborn if different from the mother's name
- family names — of partner, children, or others in the home
- language spoken and who, in the home, is available for translation if necessary
- specific cultural beliefs related to maternal and newborn care

Pregnancy/Birth Data

- history of previous pregnancies
- complications of pregnancy, labour, or birth
- type of birth
- condition of the perineum/abdominal incision

Maternal Information and Needs

- Rh immune globulin, if needed
- abnormal serologic tests (hepatitis B, HIV)
- current involvement with community agencies
- method of infant feeding (breastfeeding history if mother is multiparous)
- financial needs
- previous postpartum depression
- observation of parent handling of the newborn; concerns regarding competence and confidence
- needs for medical or nursing treatment (dressing changes, wound assessment, blood testing, IV administration)
- needs for support (homemaking, nursing visits, meals, community group, phone line)
- Rubella titre/vaccine, if indicated
- written information
- need for language-specific services

Newborn Information and Needs

- sex, gestational age, birth weight, Apgar scores
- status of screening and specifically indicated procedures: PKU/thyroid and, if indicated, hepatitis B vaccine/immune globulin, Coombs test
- feeding status: breast/formula; if breastfeeding, any concerns identified with latch, suck, lethargy
- skin colour/jaundice
- congenital or functional abnormalities
- treatment needs/procedures (e.g. circumcision care, cord clamp removal)
- follow-up plans with physician
- discharge weight
- safety issues (crib/car seat, potential or actual violent home situation)

The Infant with Special Needs

Infants, with and without special needs, share many of the same issues regarding transition to the community. Specific issues for the infant with special needs include:

- having multiple problems secondary to low and extremely low birth weight (bronchopulmonary dysplasia [BPD], retinopathy of prematurity, hearing deficit, abnormal tone, known intracranial pathology);
- having serious single or multiple congenital anomalies, metabolic disorders, and genetic diseases;
- being sent home for palliative care;
- being one of a set of twins, triplets, quads, and so on (especially if one member has died); and
- being born to HIV-positive mothers.

Specific guidelines should be established for these situations. Neonates in these categories might be discharged home and require ongoing specialized care (e.g. home oxygen, special feeding, management of acute/chronic pain, home monitoring, specific medications, and orthopedic devices). Follow-up may mean attention to tests that have been performed at birth but require a long time to be completed. Many will need special attention vis-à-vis psycho-socioeconomic factors; housing, family, and community support; and special arrangements for transport.

Some families will require assessment and assistance related to family violence, child abuse, and substance use. Others may require genetic counselling; bereavement follow-up; and referral to, or information about, community support groups for infants with special conditions (e.g. Down syndrome, group B streptococcus [GBS], cystic fibrosis) and early infant stimulation programs.

Parents will need education regarding the specific needs (bio-psycho-social) of their baby and family, including implications (if any) for future children. In most cases, care can be best coordinated by the primary physician working in cooperation with specialized follow-up programs and other community agencies.

Conclusion

Adapting to a new baby in the family is a long process. As the family members continue through their adaptation, both physically and psycho-socially, it is critical that they have information regarding the accessible support services in the community.

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APPENDIX 1

Factors Associated with Increased Risk of Problems in the Newborn

Note: This list is not to be considered exhaustive. Nor does it imply a cause and effect relationship. Because specific numbers might be debatable, they have not been provided (e.g. high and low gestational ages).

Factor	Potential Problems
Gestation <37 weeks	Respiratory distress syndrome, temperature control problems, feeding difficulties, hypoglycemia, infections, intracranial hemorrhage, periventricular leukomalacia
Post-term ≥ 42 weeks	Meconium aspiration syndrome
Small for gestational age	Meconium aspiration syndrome, hypoglycemia, jaundice, polycythemia/hyperviscosity syndrome, congenital infections, developmental anomalies
Large for gestational age	Hypoglycemia, polycythemia/hyperviscosity syndrome
Need for prolonged resuscitation	Hypoxic-ischemic encephalopathy, seizures, hypoglycemia
Pregnancy-induced hypertension	Small for gestational age, thrombocytopenia, hypoglycemia, leukopemia
Risk factors for infections (see section on The Newborn at Risk for Sepsis)	Sepsis, meningitis, pneumonia
Hydramnios	Problems with swallowing such as esophageal atresia
Oligohydramios	Renal dysplasia and agenesis, pulmonary hypoplasia
Isoimmunization	Neonatal jaundice, anemia, hydrops, thrombocytopenia
Maternal sedation	Respiratory and neurologic depression after birth, feeding difficulties
Maternal tobacco, alcohol, or other drug use	Small for gestational age, prematurity, drug withdrawal syndromes, fetal alcohol syndrome, neurologic abnormalities
Maternal medications	Neurologic depression at birth, hypoglycemia, developmental anomalies
Maternal diabetes	Large for gestational age, birth injury, hypoglycemia, polycythemia/hyperviscosity syndrome, developmental anomalies, respiratory distress, jaundice
Lack of prenatal care, social disadvantage	See Chapter 4.

APPENDIX 2

The Three Phases of the Postpartum Period

Phase	**1. Taking in**	**2. Taking hold**	**3. Letting go***
Average time span	2 to 3 days	3 to 14 days	15 days to 6 months
Dependence continuum	Dependent: Help me, hold me.	Independent: I've got to help myself.	Interdependent: We're all in this together.
Body image	Massive physical changes in a short period of time: out of touch or cannot keep pace with many of the physical adaptations taking place.	Body image in transition: feelings swing from disbelief to beginnings of acceptance; concerns regarding sexuality.	Settling into the reality of a new physical self, increased acceptance of a changed body; still changing physical image.
Energy	Very low, need for additional sleep and food. May experience an artificial high during this period.	Tired but more alert, eager to get on with mothering. Stronger desire to take care of infant.	Still tired, but accepting new demands on the family. Adjusting priorities to accommodate the new situation.
Power and control	Needs to lean on experts and others who have experience and know-how. Has strong need to be mothered.	Needs to take charge of the new relationship. Recognizes the dependence of the baby and his/her need for mothering. Strong need for being mothered continues.	Onset of empowerment, more confident and controlled. Needs peer acceptance of style of mothering.
Communication	Very talkative: needs to discuss the birth experience in detail; often vague about certain aspects of birth; needs to fill in these missing pieces.	Needs to discuss expectations of birth and baby and how they compare with reality. Needs to discuss issues such as functions, infant care, sibling rivalry, etc.	Needs sensitive discussion of new role, expectations regarding work at and outside the home. Needs to know about resumption of sexual activity. Needs to understand changing sexual feelings and needs.
Emotional state	Vulnerable: feels a victim of her body and of changing circumstances and relationships.	Vulnerable to rejection, rapid and frequent mood swings. Large hormonal changes.	Integration of the new experience into everyday reality. Increased acceptance and appreciation of the new state of affairs. Has a feeling of being able to cope. Has improved self-esteem.

* The duration of the third phase is being redefined. The six-week physical recovery period is no longer recognized as valid. Instead, the literature refers to the "fourth trimester," or a minimum of three months, for physical and psychosocial recovery. Many writers describe Phase 3 as a year in length because of the time needed to integrate the new child into the family.

Source: Health Canada. *Postpartum Parent Support Program: Implementation Handbook*, 1989.

APPENDIX 3

When to Get Help?

Call 911 (or the emergency phone number in your area) or go to the nearest Emergency Department IMMEDIATELY if:

- **You have heavy vaginal bleeding.** You have bright red bleeding from the vaginal area (between your legs) that completely soaks one or more maxi-pads in two hours and does not slow or stop with rest.
- **You have trouble breathing or chest pain.**
- **Your baby has breathing problems**. Your baby is having trouble breathing, is choking, cannot get his or her breath, or has stopped breathing.
- **Your baby has blue skin colour.** Your baby's skin colour looks blue. If you are not sure, look inside his or her mouth for blueness (tongue, lips, gums).

Call your doctor right away if:

- **You pass many blood clots** that are larger than a dollar coin ("a loonie"), and your vaginal bleeding becomes heavier and does not slow or stop with rest.
- **You have a foul-smelling vaginal odour.**
- **You have red, sore breasts.** Your breasts are red, swollen, and painful. You may have a fever. You may feel as if you have the flu. You may continue to breastfeed your baby.
- **You have painful, swollen lower legs**.
- **You have pain when you pee.** You feel burning every time you pee. You find it hard to pee. You may have a fever.
- **You see changes in your c-section cut.** You see redness or a discharge coming from the cut on your lower tummy. You may have a fever.
- **Your baby has a body temperature of over 37.5° Celsius** (99.5° Fahrenheit).
- **Your baby is vomiting**. Your baby does not want to eat and is throwing up.
- **Your baby's behaviour changes**. Your baby has very little energy and is not moving much. He or she does not wake up on his or her own and is very sleepy when he or she is awake.
- **Your baby's umbilical cord has a bad or foul smell.**

Family-Centred Maternity and Newborn Care:
National Guidelines

— CHAPTER 7 —

Breastfeeding

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Introduction[1]

As a method of feeding infants and young children, breastfeeding is both superior and normal. It is best to breastfeed exclusively for about six months, and then to continue breastfeeding, while adding complementary foods, until at least two years of age or beyond (WHO/UNICEF, 1981; 1989; 1990; World Health Assembly, 1994; Breastfeeding Committee for Canada, 1996).

Since 1978, the World Health Organization (WHO), UNICEF, and Health Canada have made the promotion of breastfeeding a primary goal. National and provincial organizations in Canada have endorsed efforts by WHO and UNICEF to promote breastfeeding through the development of international standards, as reflected in the WHO 1981 *International Code of Marketing of Breast Milk Substitutes;* the WHO/UNICEF 1989 joint statement *Protecting, Promoting and Supporting Breastfeeding;* the WHO/UNICEF 1990 *Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding;* and the 1992 WHO/UNICEF *Baby-Friendly Hospital Initiative*. The WHO's Ten Steps to Successful Breastfeeding and the WHO Code (see Appendices 1 and 2) are evidence-based (Saadeh and Akre, 1996; Neilson et al., 1998) and form the basis for the Baby-Friendly Hospital Initiative, which has been implemented in over 12,800 hospitals worldwide. A number of Canadian health organizations have endorsed these documents as well (Canadian Hospital Association, 1994; Ontario Hospital Association, 1994). The Brome-Mississiquoi-Perkins Hospital in Cowansville, Quebec is the first hospital in Canada to be designated a Baby-Friendly Hospital, receiving this designation in 1999. At the time of publication, it is the only hospital to have this title. Appendix 3 describes the steps that need to be taken for a hospital to achieve this designation. This initiative has been endorsed as a priority focus by national and provincial organizations under the auspices of the Breastfeeding Committee for Canada (1996) (Levitt et al., 1996; Chalmers, 1997; Levitt, 1998).

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[1] This chapter was adapted, with permission, from the 1996 *National Breastfeeding Guidelines for Health Care Providers*, Canadian Institute of Child Health (CICH). These *National Breastfeeding Guidelines* provide detailed reference information for health care providers working with families during the preconception, prenatal, labour and birth, postpartum, and infancy periods. This current review highlights key breastfeeding issues for the policy, practice, and systems of care. It is recommended that health care providers obtain and read these *National Breastfeeding Guidelines*.

Many factors influence a family's decisions about feeding and breastfeeding. Because of their close contact with families throughout pregnancy and the newborn period, as well as their influence on health care policies and practice, health care providers can contribute in a major way to the worldwide effort to promote breastfeeding. The critical role of breastfeeding knowledge, skills, and education for health care workers, stressed in the above position statements, is reflected in the *Ten Steps to Successful Breastfeeding* (WHO/UNICEF, 1989) (see Appendix 1).

Protecting, supporting, and promoting breastfeeding reflect the guiding principles of family-centred maternity and newborn care.

Specifically, it is essential that:

- care is based on research evidence;
- women are cared for within the context of their families — mothers, babies, and families are not separated unless absolutely necessary;
- women and their families need knowledge to make informed choices; women are empowered, through respect and informed choice, to take responsibility; and health care providers have a powerful effect on women and families;
- technology is used appropriately; and
- the importance of language is recognized.

All health care providers working with expectant or new mothers should familiarize themselves with the literature that deals with the health benefits of breastfeeding as well as the hazards of infant formula. A thorough discussion of the unique nutritional, psychological, and immunological benefits of breastfeeding is available in *National Breastfeeding Guidelines for Health Care Providers* (CICH, 1996). When considering the superiority of breastfeeding, health care providers might also find the International Lactation Consultant Association's *Summary of the Hazards of Infant Formula*[2] (1992), and the subsequent *Summary of Hazards of Infant Formula, Part 2* (1998), to be comprehensive resources.

The prevalence of breastfeeding reflects the importance placed upon it by society (Riordan and Auerbach, 1993). In effect, the non-valuing of women, children, and breastfeeding creates a fundamental obstacle to the success of women and breastfeeding. For a cultural shift to further promote breastfeeding, policy development at both the institutional and community levels is necessary (WHO/UNICEF, 1990). Health care providers need to be proactive in stimulating the development of policies. They can begin by endorsing the facts outlined in Table 7.1.

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[2] This document describes and references the following hazards of infant formula: allergic manifestations, morbidity such as infection; excesses, deficiencies, and omissions of essential ingredients in infant formula; contaminants; cost; mortality; and potential for injury.

Table 7.1 Facts About Breastfeeding

- Breast milk is all that is needed to support physical growth for about the first six months of life.
- Continuing breastfeeding and adding complementary foods is the preferred method of feeding infants for the first two years and beyond.
- Women who are knowledgeable and confident about breastfeeding are more likely to succeed.
- All health care providers who have contact with expectant families have the responsibility to promote the decision to breastfeed as the healthiest choice for infant and mother.
- The attitudes and behaviours of health care providers can affect whether or not a woman will breastfeed and how well she will succeed.
- Knowledge about the practices that support breastfeeding, its assessment, and the management of potential difficulties by health professionals can affect breastfeeding success.
- Knowledge, attitudes, and beliefs about breastfeeding by the woman's family and the general public can affect a woman's choice and her subsequent breastfeeding experience.
- Undergraduate and continuing education curricula for all health care providers who work with childbearing families should include up-to-date breastfeeding content, consistent with national standards.
- Breast milk is affected by lifestyle habits such as smoking, and the use of alcohol or recreational drugs.
- Breastfeeding success is facilitated in hospital by keeping mother and infant together in a combined mother-infant postnatal care or single-room maternity care situation; there, mother and infant are cared for together by the same nurse, thus maximizing mother-infant contact and consistency of breastfeeding support.
- The distribution of formula samples and formula company literature is an unfair marketing practice that has negative effects on successful breastfeeding.
- Cesarean birth, premature birth, multiple births, or congenital abnormalities are not contraindications to breastfeeding.
- Content and language of breastfeeding education materials should reflect Canada's multicultural population.

Adapted from: CICH. *National Breastfeeding Guidelines for Health Care Providers*, 1996, p. 14.

Institutional and community policies should deal with the following issues:

- the education of health care providers (CICH, 1996, p. 10-13);
- the assessment of the success of early breastfeeding, particularly for mothers and babies discharged from hospital after fewer than 48 hours, by a skilled health care provider;
- the provision of hospital follow-up;
- community support;
- the coordination and collaboration among hospitals, community agencies, and lay and professional groups during program planning, implementation, and evaluation;
- the development of benchmarks and a system for monitoring their attainment, including such indicators as the prevalence of exclusively breastfed infants at discharge, and the prevalence of exclusively breastfed infants at four to six months of age;
- the protection of the breastfeeding rights of working women; and
- the development of an action plan for becoming "Baby-Friendly Hospitals" and "Baby-Friendly Communities."

Policies for institutions could be based on the *Ten Steps to Successful Breastfeeding* and the *WHO Code*, which form the core of the Baby-Friendly Initiative (see Appendices 1 and 2). Policies for community-based services could be based on the *Ten Steps to Baby-Friendly Communities* (see Appendix 4).

Prenatal Period

Informed Choice

By early pregnancy, most parents have decided whether to breastfeed or not. In fact, this decision is often made before the first prenatal visit or class. Prenatal intent is a strong predictor of breastfeeding outcome (Health Canada, 1994). Choice of feeding method is influenced by a number of factors, including personal experience, knowledge, culture, and attitudes of significant others. Parents most often choose breastfeeding because they believe that mother's milk is healthier for their infant than formula or cow's milk (Losch et al., 1995). However, some women do make (or change) their decision about infant feeding *during* pregnancy or during the early postnatal period.

During pregnancy, it is up to health care providers to ensure that families are given the opportunity to make well-informed decisions about infant feeding. They should explain that breastfeeding and formula feeding are not equivalent choices. They should ensure that women and their partners are informed about the benefits of breastfeeding and the risks of not breastfeeding. Some health care providers may avoid providing this information for fear of making a woman feel "guilty" if she chooses not to breastfeed. However, breastfeeding information should be a routine part of health promotion, along with such topics as regular prenatal care, maternal nutrition, use of infant car seats, and use of tobacco. Health care providers also have the responsibility to accept the choices made by families — once they have ensured that the family has received accurate information.

The approach of the health care provider to discussions with the mother and family in the prenatal period should be based on the individual needs of both mother and family. Some mothers and families will need a lot of information on breastfeeding; some will only need reassurance that they are doing the right thing; others may require an in-depth approach because of breastfeeding problems with a previous baby. (In the latter instance, a referral to someone specialized in helping mothers with breastfeeding, such as La Leche League, lactation consultants, clinics, or the maternity ward, might be useful for the health care provider as well as the mother and family.) All mothers and families should be given information about the community resources available for guidance and help — both during the prenatal period and once the baby is born. This is especially important because women often find support for breastfeeding only when it is going well. Whenever health care providers feel uncomfortable about giving advice on breastfeeding, they should refer the mother and family to one of the professionals or services mentioned above.

There are many myths about breastfeeding that might deter a woman from choosing to breastfeed her infant. Health care providers should explore these myths with women. The following myths are examples of disinformation:

Myth 1: *Many women who apparently choose to formula feed never consider breastfeeding in the first place.* The role of the health care provider is to raise the issue of breastfeeding.

Myth 2: *Breastfeeding and formula feeding are essentially equivalent in quality.* This is not the case. Breastfeeding is a superior method of infant feeding.

Myth 3: *Breastfeeding is complicated and painful.* It is common for women and babies to take one to two weeks to learn the skills of breastfeeding. However, once well established, it is much easier and less tiring than formula feeding. Breastfeeding should never hurt — if it does, something is wrong. In most cases, slight alterations in position and latch will alleviate the pain.

Myth 4: *Fathers cannot be involved with the baby if the mother is breastfeeding.* The father can do a good deal for the mother and baby besides feed the baby. For example, he can cuddle, play with, bathe, dress, and change the baby.

Myth 5: *Breastfeeding complicates family life.* Breastfeeding need not "tie a mother down." It is a question of attitude. The baby is, in fact, more portable when breastfed. The mother can go anywhere and breastfeed. Not only is "discreet" nursing possible, but "supper" is always ready.

Myth 6: *Women cannot be employed and breastfeed.* Women can combine mothering and paid employment in different ways (see page 26 on Paid Employment Outside the Home). If women choose to continue breastfeeding and return to outside work at six months or later, strategies are available to help make it easier. When early return to work is contemplated, or necessary, breastfeeding can be continued through pumping and/or partial breastfeeding. In effect, three weeks of breastfeeding are better than none, and six weeks are better than three.

Myth 7: *Breastfeeding ruins the mother's figure.* This is not true. It is pregnancy and age that cause changes in the mother's breasts. Breastfeeding helps with weight loss and involution of the uterus.

A woman's personal experiences and psychosocial support will also influence her decision to breastfeed. For example, women with supportive partners and families are more likely not only to choose to breastfeed but to succeed (Kearney, 1988; Inch, 1989). On the other hand, women who have been sexually or physically abused may not want to breastfeed. It is critical that psychosocial assessment and counselling be an integral part of prenatal care (see Chapter 4).

It is important too for all health care facilities to be "breastfeeding friendly" and to demonstrate that with posters and information brochures. Posters and brochures are some of the visible ways of supporting and valuing breastfeeding and the breastfeeding mother. As well, descriptive literature endorsed by governments and advocacy groups is often available free of charge.[3] Of course, health care facilities should not be centres for marketing infant formula. Nor should posters, flyers, and other items from formula companies be endorsed, for they are in direct conflict with the *International Code of Marketing of Breast Milk Substitutes* and the *Baby-Friendly Hospital Initiative* and, in many cases, undermine breastfeeding. Their distribution has been shown to shorten the duration of breastfeeding (Frank and Wirtz, 1987). (Appendix 5 provides a guide for use when assessing whether print materials support breastfeeding.)

Breast Assessment

Most women's breasts and nipples are well adapted to feeding their babies. It should be noted that breasts and nipples that are of concern during the prenatal period may prove to be just fine once the baby starts nursing. (Typical of the latter situation is the mother who seems to have flat or inverted nipples during pregnancy.)

Women's breasts should be assessed as a part of prenatal care. A few situations may require extra help. For example, if a woman has true inverted nipples she may have great difficulty getting her baby to latch onto the breast. Although intervention before the baby's birth may or may not be useful, any situation with which health care providers are uncomfortable should result in a referral to health care providers experienced in dealing with breastfeeding problems (e.g. lactation consultants or breastfeeding clinics). Making such a referral may avoid problems; at the same time, it sends the message that the health care provider believes that breastfeeding is important enough to warrant the referral. A referral may be indicated in the following situations:

- inverted nipples;
- unusual breast shape or breasts that differ greatly from each other;

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[3] For example, Health Canada's *Breastfeeding Media Kit* and brochures, *10 Valuable Tips for Successful Breastfeeding* and *10 Great Reasons to Breastfeed*. (See Companion Documents.)

- breast reduction surgery. Breast reduction surgery often results in a decrease in the woman's capacity to produce milk, to the point where a significant majority of women cannot breastfeed exclusively. However, they can breastfeed, and the baby can receive supplementation (best done with a lactation aid). Some mothers nevertheless do manage to breastfeed exclusively (CICH, 1996).
- breast augmentation surgery. Usually, women who have had breast augmentation surgery have no more difficulty breastfeeding than women who have not had this type of surgery. However, they may be concerned, and need reassurance, about the effect of their silicone implants when breastfeeding their baby. Although the evidence shows that there need be no concern for the baby, a referral is warranted if the health care provider is uncomfortable giving that reassurance. As well, any breast surgery with a circumareolar incision will interfere with later breastfeeding. If augmentation has been done in that way, there may be difficulties.
- concern about medical indications that might result in breastfeeding being contraindicated. In most situations, the benefits of breastfeeding outweigh the risks. In situations of possible risk, the mother should make her own decision. In a few cases, breastfeeding may be contraindicated; for example, in women who have breast cancer or women undergoing chemotherapy and having diagnostic/treatment procedures using radioactive compounds. As well, when the mother is known to be HIV antibody positive, alternatives to breastfeeding are appropriate (CICH, 1996; CPS et al., 1998). Breastfeeding is contraindicated when women have a herpes simplex infection (only when the lesions involve the breast) and when women decide to continue using certain street drugs. The infant of a mother who develops chicken pox will likely become infected, regardless of feeding method. Varicella in infants is generally mild. A rare exception is the infant whose mother develops chickenpox five days before or two days after birth: such infants may develop severe infection and should be treated with varicella-zoster immune globulin (VZIG) as soon as possible (within three days). Mother and infant should be isolated together. Breastfeeding is permitted when the mother becomes non-infectious (lesions are dry) or when the infant receives the immune globulin. (See CICH 1996, p. 20, for detailed information.)

First Postnatal Days

Promoting Breastfeeding Success in the Early Days

Early, frequent, unrestricted, exclusive, and effective breastfeeding is important for the establishment of normal lactation. Skilled, consistent help from a care provider with a positive approach should be available to support this process. This is a learning experience for both mothers and babies — just as mothers learn, so do babies. The following pointers are recommended.

- **Start early.** Provide an opportunity to breastfeed during the first half-hour after birth, when babies are most alert. Create a calm, private atmosphere. Babies may take some time to orient to the breast or may only lick or nuzzle; on the other hand, they may latch and suckle well. Provide assistance with positioning, as needed. Factors that may interfere with the infant's early breastfeeding behaviour include maternal narcotics in labour, nasopharyngeal and gastric suctioning, and interruption of mother-infant contact during the first hour. Premature babies or babies who are ill should start to breastfeed as soon as their condition permits, beginning with "nuzzling" at the breast (see Special Situations, page 22).
- **Encourage frequent, unrestricted, baby-led feedings.** Babies nurse best "on cue,"[4] before they reach the crying state, and for as long and as often as they are interested. For the newborn, this is usually every two to three hours throughout the day and night (eight to twelve times, or more, in 24 hours). The infant "cues" for feeding before crying are many: they include rapid eye movements, waking, stretching, stirring, hand-to-mouth activity, and such oral activities as sucking, licking, and rooting. The length of nursing time varies with infant age and nursing style. It may take between 20 and 30 minutes to complete a feed, give or take a few minutes. It is important to reassure parents that both infant and mother may need time to become comfortable with breastfeeding.
- **Wake a sleepy baby if necessary.** Many babies do not establish effective nursing patterns until 36 to 48 hours after birth. If babies are sleepy,

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[4] The term "demand feeding" is commonly used by health care providers. However, the term "on cue" is preferred. The important message is to look at the baby, not the clock.

they need to be gently wakened and given the opportunity to breastfeed — at least every three hours during the day and one to two times during the night. Extra help is often needed in these situations, particularly for first-time mothers, to ensure not only that mother and infant develop the skills of positioning and latching the infant at the breast, but also that the infant is breastfeeding frequently and sufficiently effectively to establish an adequate milk supply.

- **Allow for maximum mother-baby contact.** Mothers and babies should room together in the hospital, throughout their postpartum stay, including nights. Systems such as labour/birth/recovery/postpartum room (LBRP, or single-room maternity care), or combined mother-baby postnatal care, assign nurses to care for mother-baby pairs, thereby maximizing mother-baby contact and the continuity of breastfeeding support (see Chapter 6). Mothers should be enabled to have their infants in their beds, especially if the infants are either reluctant to breastfeed or difficult to settle (McKenna and Mosko, 1994). Some hospitals may be concerned about the infant's safety; health care providers are reminded to ensure that the mother's bedrails have been raised.
- **Assist with positioning and latch.** Proper positioning and latch of the infant at breast is key to maternal comfort; adequate milk production; infant growth; and the prevention of sore nipples, engorgement, and breast infections. As they find out what works best for them, mothers may need assistance in learning several nursing positions: conventional and alternate arm (modified cradle) holds, lying, and the football hold. The alternate arm (modified cradle) hold is usually the easiest to learn. Breastfeeding should be comfortable as well. There may be some initial discomfort as the baby latches on, but this should not persist (see CICH, 1996, p. 67-71). Care providers who are skilled in the assessment of maternal and infant positioning, latch, and suckle of the infant at breast should be available to the mother-infant pair throughout the early postnatal period. A standardized approach to assessment should be used to ensure that parents receive consistent advice.
- **Ensure exclusive breastfeeding.** Breastfeeding babies should receive only breast milk, without other foods and fluids, unless there is a medical indication (see Special Situations, page 22). Supplementation interferes with milk production. In addition, babies should not routinely use soothers and pacifiers.

How to Tell if the Baby Is Getting Enough Milk

Concern that the baby is not getting enough milk is one of the most frequent reasons for stopping breastfeeding. Mothers need reassurance — not only that breastfeeding is the best and most natural way to feed their baby, but also that they can produce enough milk. However, failure to establish an effective latch during the first week can lead to infant dehydration or failure to thrive. All parents should know how to tell when breastfeeding is going well and when to seek help.

Evaluating whether or not breastfeeding is going well involves assessing a number of criteria — the effectiveness of the feedings, the frequency of feedings, the baby's stools and urine, and the baby's growth. Parents can be reassured that babies are getting enough milk and breastfeeding is going well if the following signs are present:

- The infant is nursing frequently (approximately eight to twelve times a day) and effectively. Effective nursing means that the baby seems hungry at the beginning of a feeding, the mother can hear the baby swallowing or a quiet "caw" sound during feeding, and the baby becomes more satisfied toward the end of the feeding. Also, the mother's breasts will feel full before feedings and softer after. By day three to five, once the infant is getting increased quantities of milk parents may be taught to look for an open-pause-suck type of feeding pattern.
- The baby produces soft or liquid stools, several times per day. By day three to four, all meconium should be passed. Stools may be yellow or greenish and should not be dry or hard. After the first month, stools may become less frequent.
- Urine is pale and odourless. In the first three days, one to two wet cloth diapers per day is common, along with (or without) the occasional brick red staining. By days four to six, as milk production increases, six or more wet cloth diapers per day is normal. (It is difficult to tell when disposable diapers are wet. A tissue placed in the disposable diaper can help in the determination. Cloth diapers can be used if parents are unsure whether or not the baby is voiding.)
- The baby is alert and growing.

Guidelines for taking a feeding history are found in Appendix 6.

WHEN TO GET HELP

All parents should know when to get immediate breastfeeding help. They should be made aware of the following signs. While it is possible that a healthy breastfeeding baby may have a few of these signs, a thorough assessment of the situation is still warranted, especially in the early days and weeks, to determine if the baby is feeding effectively.

- The baby has fewer than two soft stools daily, during the first month.
- The baby has dark urine and/or fewer than one or two wet diapers daily for the first three days, or fewer than six wet diapers by days four to six.
- The baby is sleepy and hard to wake for feedings.
- The baby is feeding less than approximately eight times in 24 hours.
- The mother has sore nipples that have not improved by day three to four.
- The mother has a red, painful area of the breast accompanied by fever, chills, or flu symptoms.

Hospitals and other agencies should produce an easy-to-read handout or sign, listing these indicators, for parents to post on their wall or refrigerator.

Weight loss and subsequent gain is one indication of how well breastfeeding is going (Cooper et al., 1995; Lawrence, 1995; Meek, 1998; Tounsend and Merenstein, 1998). However, it should not be considered in isolation, and it is crucial to assess the effectiveness of the baby's feeding at the breast, as well as his or her stools, urine and behaviour. It is often difficult to accurately assess differences in the baby's weight in the early days of life, due to differences in scales. Babies should always be weighed unclothed, without a diaper. The following guidelines are suggested in the literature. An initial weight loss during the first 10 days of up to 10 percent of birth weight can be normal. However, during the first week a weight loss of 7 percent warrants a close assessment of the breastfeeding situation. Babies return to birth weight by two to three weeks of age, and gain one-half to one ounce per day for the first few months. A checkup to assess and weigh the baby is recommended by one week of age or earlier by a skilled and knowledgeable health care provider, depending on length of hospital stay (see Chapter 6).

Many babies go through several growth spurts during which they will nurse more frequently (i.e. 10 to 12 times a day), the purpose being to increase mother's milk supply to meet their new needs. Mothers may need reassurance that they can and will produce enough milk to meet the baby's needs during these times of growth. They should also be reassured that the baby's emptying of the breast actually promotes milk production.

Parents should be given written information identifying the signs of successful breastfeeding and when to get help. (A sample of such a handout is found in Appendix 7.) They should also be given a list of sources of breastfeeding help available in the community. This might include the public health department; the parent help line; breastfeeding support clinics, hospital clinics, or drop-in centres; the local La Leche League; private lactation consultants; and the physician or midwife. Some hospital mother-infant units also offer 24-hour telephone and/or on-site breastfeeding help.

Nutrition of the Mother When Breastfeeding

It is recommended that breastfeeding mothers eat a balanced diet, based on a variety of healthy foods. They should also eat as their appetite dictates. *Canada's Food Guide to Healthy Eating* (Health Canada, 1997) is meant to guide mothers in eating the requisite wide variety of healthful foods.

The following are a few practical considerations:

- Encourage the mother to eat (or drink) three to four servings of milk products, or other good sources of calcium, per day.
- Encourage the mother to drink enough fluids to satisfy thirst. Many nursing mothers find that they need more fluids than usual.
- During lactation, explore the mother's regular diet and traditional foods with her to determine how fibre, fluids, milk products, or other sources of calcium, vitamins, and minerals are included. In some cultures, food is not classified into four food groups. The concept of eating from the four food groups for a balanced diet may be unfamiliar, as well as culturally inappropriate.
- Ensure that the mother's vegetarian diet is balanced; a nutritionally adequate diet for breastfeeding includes milk and milk products, as well as meat alternatives such as eggs, beans, lentils, nuts, and tofu. If the mother drinks fewer than two cups of milk per day, other sources of calcium, vitamin D, and vitamin B_{12} are needed. If not fortified, soy milk, although it provides protein and calcium, is a poor source of calcium and vitamin D. Also, if all animal products are eliminated, alternative sources of calcium, riboflavin, vitamin B_{12}, vitamin D, zinc, and iron are required.

Many women are discouraged from breastfeeding because of incorrect advice about nutrition. The following are some of the myths:

Myth 1: *A breastfeeding mother has to avoid, or eat, certain foods.* A breastfeeding mother should try to eat a balanced diet. However, she need not eat any special foods or avoid certain foods. Furthermore, a breastfeeding mother need not drink milk in order to make milk.

Myth 2: *A breastfeeding mother has to eat more in order to make enough milk.* Even women on very low calorie diets usually make enough milk, at least until their caloric intake has been critically low for a prolonged period of time. Generally, babies will get what they need. Although some women worry that if they eat poorly for a few days this will affect their milk, there is no need for concern. Such variations will not affect the quantity or quality of the milk supply. Traditional wisdom has dictated that breastfeeding women need to eat 500 extra calories a day. But this is not necessarily so for all mothers. Some women do eat more when they breastfeed; others do not; some even eat less. None of these practices seems to harm the mother, baby, or milk supply. The bottom line is that the mother should eat a balanced diet, dictated by her appetite.

Myth 3: *A breastfeeding mother must drink lots of fluids.* The mother should drink according to her thirst. Although some mothers feel thirsty all the time, many others drink no more than usual. In fact, the mother's body knows if she needs more fluids, and tells her so by making her feel thirsty. Drinking excessive fluids can decrease milk supply.

Myth 4: *Breastfeeding is contraindicated if a mother smokes or drinks alcohol.* Although it is important that women be supported in all attempts to stop or reduce smoking, breastfeeding is still the best choice even if smoking continues. Moreover, while heavy consumption of alcohol has been shown to interfere with milk supply and to harm the breastfed infant, "light" social drinking is commonly thought to be compatible with breastfeeding (CICH, 1996).

Shortened Length of Hospital Stay

IMPLICATIONS FOR BREASTFEEDING

The trend toward shorter hospital postnatal stays has important implications for breastfeeding outcomes and follow-up. Flexibility in the timing of the hospital discharge is key, based as it is on the individual circumstances of both mother and baby and the availability of community follow-up services. Some women may be ready and prefer to return home with their babies several hours after birth; others may not meet the discharge criteria for several days or longer. No matter when mothers and babies go home, they should be assessed for their follow-up needs.

Establishment of lactation in the first three to five days is vital to the well-being of the newborn. Early contact with qualified professionals is recommended. Support and assessment of both mother and infant should be undertaken to promote effective patterns of feeding and to prevent such problems as the infant's dehydration, hypoglycemia, exaggerated physiologic jaundice, lethargy, and failure-to-thrive; and the mother's lowered self-esteem, guilt, perception of failure, and even depression.

The normal newborn may take from birth to 48 hours to establish feeding; that is, to show regular cues for feeding and to consistently succeed at latching and suckling at the breast with a minimum of help. With effective breastfeeding, the onset of lactation (i.e. an increase in maternal milk supply) usually takes two to three days. Consistent, appropriate and professional support during this crucial early period can make a profound difference in long-term breastfeeding success.

SUGGESTED CRITERIA FOR HOSPITAL DISCHARGE AND FOLLOW-UP GUIDELINES

A number of criteria for discharge have been proposed (CPS, 1996; SOGC, 1996). Specific breastfeeding discharge criteria include:

- establishment of "effective breastfeeding"; that is, two consecutive feedings managed independently by mother and baby, in which baby has latched on and suckled well at each breast;
- capacity of the parent(s) to identify early signs of poor feeding, dehydration, when to seek help, and the community resources to get that help (see Appendix 7);

- development of realistic plans for follow-up, with consideration given to such accessibility factors as transportation, distance, child care coverage, language capabilities, and telephone access (see below);
- determination that the infant has lost less than 7 percent of birth weight at the time of discharge, if within the first week; and
- determination of an appropriate health status for discharge for the mother.

Follow-up should be provided by a health care provider (nurse, physician, midwife) who is knowledgeable, skilled, and experienced in breastfeeding assessment and counselling. If discharge occurs *prior to 48 hours after birth:*

- All discharge criteria (including the above conditions) must be met.
- The family must be contacted by telephone, or a home visit made within 24 hours of discharge.
- The mother and infant should be physically examined by a skilled health care provider within 48 hours of discharge.
- The newborn must be physically examined, again by a skilled practitioner, at seven to ten days of age.

Many mothers may be exhausted, or live a long distance from their care providers, hospitals, and/or clinics. The guidelines for follow-up within 48 hours of discharge must therefore reflect the provision that follow-up will be provided in the family's home, if appropriate.

If discharge is at *48 hours or more after birth:*

- The discharge criteria must be met *or* any complications stabilized, concerns identified and addressed, appropriate care initiated, and follow-up ensured.
- The newborn must be examined by a skilled practitioner by seven to ten days of age (or earlier, if problems have been identified).
- A follow-up contact by telephone or a home visit within 48 hours is highly desirable.

Follow-up is especially important for mothers and babies discharged before 48 hours after birth. The reason is that it may be difficult to assess the adequacy of breastfeeding, along with certain other aspects, before that period of time has elapsed.

Potential Difficulties

Care providers should be knowledgeable about the prevention, assessment, and treatment of the following potential breastfeeding problems:

- breast engorgement
- sore nipples
- plugged ducts
- breast infection
- candidiasis/thrush
- leaking
- overactive milk-ejection reflex (CICH, 1996).

Neonatal Jaundice

It is rarely appropriate to interrupt breastfeeding for neonatal jaundice. Two distinct conditions are associated with jaundice and breastfeeding: "poor breastfeeding" jaundice, and the "breast milk jaundice syndrome."

Poor breastfeeding jaundice refers to an exaggeration of normal physiologic jaundice. Caused by infrequent and/or ineffective breastfeeding, it results in delayed passage of meconium and low caloric intake. Prevention includes early, frequent, and unrestricted breastfeeding: a good latch; maximum mother-infant contact; minimal maternal intrapartum drugs; and anticipatory guidance for parents. Treatment includes increasing the frequency and effectiveness of feedings to a minimum of eight in 24 hours, thereby upping the infant's intake and stimulating breast milk production. Inappropriate supplementation, particularly when given with an artificial nipple, can interfere with the establishment of breastfeeding. Strategies to wake a sleepy baby include skin-to-skin contact with the mother; enticement with expressed breast milk; and tactile stimulation of the infant's palms, head, and feet during feeding.

Breast milk jaundice syndrome is an uncommon condition. Affecting 2 to 4 percent of breastfeeding newborns and appearing toward the end of the first week, it peaks between approximately days 10 to 15 and may last 3 weeks or longer. Because the condition is benign in infants who are otherwise healthy, it is not necessary to interrupt breastfeeding. However, it is essential that other conditions such as hypothyroidism be ruled out so that breast milk jaundice is not confused with conditions that may require treatment.

Acceptable Medical Reasons for Supplementation

The indications for supplementation are few in number. Suggested indications for giving fluids or food in addition to, or in place of, breast milk — as outlined in UNICEF's 1992 *Baby Friendly Hospital Initiative and Programme Manual* — are the following:

- infants with documented hypoglycemia that *does not improve with increased effective breastfeeding*;
- infants whose mothers are severely ill (e.g. psychosis, eclampsia, shock);
- infants with certain inborn errors of metabolism;
- infants with dehydration that *does not improve after breastfeeding*; and
- infants whose mothers are taking medication contraindicated with breastfeeding (e.g. cytotoxic drugs, radioactive drugs).

Infants who are too small or ill to receive fluids orally may initially require total or partial fluid therapy intravenously. Maintenance of gastrointestinal function, to introduce at least minimal enteral feedings early on, is beneficial.

When breastfeeding is temporarily delayed or interrupted and/or supplementation is *medically* indicated, fresh expressed mother's milk, if available, should be used. Bottle feeding, which may interfere with the infant's ability to suckle well at the breast, can be avoided by using a number of alternative methods such as the use of a lactation device, cup feeding, finger feeding, or a spoon or dropper. When breastfeeding is delayed or interrupted, mothers should be helped to establish lactation through regular milk expression with breast pumps.

Special Situations

The nutritional, immunological, and psychosocial benefits of breastfeeding are vital to the well-being of the premature or sick infant. As well, breastfeeding is desirable and possible in such special situations as preterm births, multiple births, and babies with congenital abnormalities. In fact, in these situations, where the risk of illness is even higher than for the normal term infant, breast milk can help in preventing complications. Maternal breast milk has also been shown to be the single most effective avenue for preventing necrotizing enterocolitis (NEC) in the preterm infant (CICH, 1996). However, special breastfeeding support may be required in these cases and should be formally acknowledged in the calculation of workload for nursing staff.

Obstacles to breastfeeding the preterm infant can be overcome in neonatal intensive care units. These units should:

- minimize separation of mothers and babies;
- provide private facilities for feeding and pumping;
- provide accurate, timely information regarding breastfeeding to mothers and families;
- ensure that the health care providers working in the unit have the knowledge and skill to help mothers successfully provide breast milk for their infants;
- teach and assist mothers with expressing and storing breast milk (see Appendix 8);
- provide mothers with names and phone numbers of community breastfeeding support services, other mothers of preterm infants, and/or La Leche League; and
- provide mothers with information about where to get supplies and pumps.

Often, breast pumps are not accessible to women with minimal financial resources. Hospitals and community agencies should work together to make pumps available on an equitable basis to all women.

For the premature infant, breastfeeding has been shown to be less physiologically demanding than bottle feeding (Meier, 1988). Preterm infants can begin to feed at the breast as soon as they can be stable outside the isolette for short periods and are able to coordinate sucking and swallowing — often by 32 weeks' gestation. However, the baby can approach the breast to lick or nuzzle before this time. "Kangaroo care" provides early preparation for breastfeeding. Breastfeeding the preterm infant often proceeds through several stages — deciding to breastfeed, establishing a milk supply, gavage feeding of expressed breast milk (EBM), in-hospital breastfeeding (early and later cue-based feeding), and following up after discharge (Meier and Mangurten, 1993).

Twins, triplets, and even quadruplets can be successfully breastfed, either entirely by breast or with added supplements, preferably expressed breast milk. For the first few months, much time and energy is required to feed these multiple babies, regardless of the feeding method chosen. If a mother plans to breastfeed only, it is important to let the babies nurse frequently. The build-up of a good supply of milk is thus ensured (CICH, 1996).

In most instances, with adequate support, a mother can successfully breastfeed a baby born with a disability or special problem. Health care providers should provide mothers and families with information about support agencies and groups in their community.

Medications and Breast Milk

Given the benefits of breastfeeding, it is rarely appropriate to discontinue breastfeeding due to maternal medication. Information about the transfer of specific drugs into human milk and the potential effects on the infant is constantly expanding. It is therefore difficult to maintain up-to-date lists of drugs and their effects on breastfeeding. However, the following points should be considered:

- Most maternal drugs pass into human milk at a level which averages less than 1 percent of the maternal dose.
- Very few maternal drugs are contraindicated with breastfeeding.
- For the limited number of drugs that are contraindicated or should be used with "caution," the following caveats apply:
  - a safe alternative medication can usually be found;
  - drugs listed as "cautionary" can be used if the infant is simultaneously monitored;
  - drugs considered safe for use in children, employed at the lowest possible dose, are the safest;
  - drugs with shorter half-lives can be chosen;
  - slow-release drugs should be avoided; and
  - drugs should be individually assessed so that, as much as possible, their peak concentration in breast milk does not coincide with a feeding (CICH, 1996).

The question to be considered is whether the enormous benefits of breastfeeding to both baby and mother outweigh the risks of the infant's exposure to the drug.

The 1994 American Academy of Pediatrics statement — *The Transfer of Drugs and Other Chemicals into Human Milk* — is the most commonly used reference in this area. A number of other references are recommended as well; for example, Thomas Hale's *Medication and Mothers' Milk* (1999). The *National Breastfeeding Guidelines for Health Care Providers* (CICH, 1996) gives detailed information regarding drugs that are contraindicated during breastfeeding and drugs to be used with caution. Drug information centres are also excellent sources of information concerning drugs in breast milk. Examples are the Motherisk Clinic in Toronto at The Hospital for Sick Children (Tel.: 1-877-327-4636, Fax: [416] 813-7562, http://www.motherisk.org); the Breastfeeding Collaborative Program, The Hospital for Sick Children (416) 813-5757; and the Lactation Fax Hotline (Thomas Hale; Fax: [806] 356-9480). Up-to-date information can be accessed via fax from this hotline; a registration fee applies.)

As well, the special section on drugs and breast milk in the Canadian *Compendium of Pharmaceuticals and Specialties* (Canadian Pharmacists Association, 1998) contains general information of possible interest. However, the individual drug monographs are usually inadequate as a source of information about drugs and lactation; they are limited and often overly restrictive.

Late Postnatal Period

Reasons for Stopping Breastfeeding

The main reason for early termination of breastfeeding is the perception of insufficient milk. Other reasons for quitting, during the first six weeks, include sore nipples, engorgement, problems with technique, and maternal fatigue. Later, from four to six months, the mother's paid employment outside the home may become a reason for stopping.

All breastfeeding parents should understand the principle of "supply and demand"; that is, mothers will produce enough milk in direct response to the baby's frequent suckling. This is an important time for the mother to attend to her own rest and nutrition needs, while at the same time focusing on infant feeding. (See the *National Breastfeeding Guidelines for Health Care Providers* [CICH, 1996] advice about taking an infant-feeding history and responding to common parental concerns about milk inadequacies.)

It is important, too, that parents have an understanding of the infant growth spurt phenomenon. Depending on the situation and the time of hospital discharge, babies should have a follow-up assessment by seven to ten days of age or earlier.

Many factors interfere with milk supply. The following are among the most common:

- separation of mothers and babies;
- infrequent feedings;
- restricted feeding duration;
- poor positioning and latching, resulting in ineffective suckling;
- sleepy babies;
- supplementation for non-medical reasons;
- use of a soother or pacifier to delay feedings;
- breast engorgement and sore nipples;
- use of nipple shields; and
- maternal fatigue.

Vitamin and Mineral Supplementation

The Canadian Paediatric Society recommends that breastfed infants receive vitamin D (10 μg or 400 IU) daily, until weaned. This recommendation is the subject of ongoing controversy. Although it is recognized that some babies will be at risk for vitamin D deficiency, the controversy revolves around whether *all* babies should receive supplementation. As well, fluoride supplementation is not recommended for infants under six months. The recommendation is that infants between the ages of six months and two years, living in areas where the household water supply contains less than 0.3 ppm (μg/L) fluoride, should receive daily supplementation of 0.25 mg fluoride. However, where the principal drinking water source contains 0.3 ppm (μg/L) or more fluoride, supplementation is not recommended (CPS et al., 1998). In other words, excessive intake of fluoride is to be avoided. As for iron supplementation, full-term infants who are breastfed do not need extra iron until the age of six months. After that, for healthy, term infants, the iron in solid foods usually provides sufficient intake.

Paid Employment Outside the Home

Since time began, women have skilfully combined childbearing, breastfeeding, and working. Breastfeeding and working only became problematic when the place of employment began to separate mothers and children in early childhood. As increasing numbers of women work outside the home, Canadian society faces challenges related to breastfeeding and childbearing. Wherever mothers work, be it at home or away, community support will benefit families with children. The children themselves benefit from consistent, loving care — the first three years being especially critical. And breastfeeding is the optimal way to provide the best nutrition, health, and secure emotional attachment (Jones and Green, 1996, p. 19). Family policies should be developed with these principles in mind.

The first step is to help families have a real choice between staying at home or working outside of the home so that the return to work will not be influenced by economic pressure only. When women do work outside the home, it is in the best interest of Canadian children to see that mothers are supported in pursuing a variety of options. For example, they might take an extended period of time off when the children are young, before returning to paid employment; they might "sequence" their careers; or the workplace might be made more flexible to accommodate the needs of mothers, fathers, and children (Jones and Green, 1996, p. 19).

In all communities, therefore, action is needed to:

- give families real choices about the need to work outside the home, using such means as maternal and parental leave policies and tax incentives;
- create public awareness of the rights of women to work and breastfeed;
- facilitate and protect cultural and traditional practices that are supportive of the breastfeeding mother working in or away from home;
- involve community leaders and other groups in the development of the social support needed for women to combine breastfeeding and work;
- educate employers and others about the importance of breastfeeding and the need to provide a supportive work environment;
- increase awareness of national legislation that protects the breastfeeding rights of all women; and
- recognize workplaces that are mother and baby-friendly (Jones and Green, 1996, p. 21).

Appendix 9 outlines the "Ten Steps to Creating a Mother-Friendly Workplace" (Jones and Green, 1996).

Mothers whose breastfeeding becomes well established are more likely than others to continue breastfeeding after returning to paid employment or school. When a mother can delay regular separation from her baby until the baby is four months old and/or return to work on a part- rather than a full-time basis, she is more likely to maintain her milk supply and her child is more likely to remain interested in breastfeeding. Although many women returning to full-time work earlier than four months after birth are able to maintain their breastfeeding relationship, their incidence of premature introduction of solids and of weaning is much higher than for those returning later (Jones and Green, 1996, p. 19; Auerbach, 1987).

Women choosing to continue to breastfeed on their return to work follow many different pathways to success. Strategies used to combine breastfeeding and employment vary, depending on the mother's beliefs, goals, and the support available. Whereas some women will arrange to nurse their babies during their breaks, others will pump or express milk during the work day in order to maintain their milk supply and store milk for subsequent feedings. (See Appendix 8 for advice for mothers regarding the collecting and storing of breast milk.) Other women will partially wean their baby from the breast and provide artificial milk during their absence. Babies commonly rearrange their pattern so as to nurse more frequently during the hours that the mother is available and to sleep more often during her absence. Families need to understand that breastfeeding is most likely to continue when, to the best of their ability, they limit the separation time between the mother and baby, assist the mother to regularly express or pump her milk, and provide maximum support for the mother to focus on meeting her baby's needs (Jones and Green, 1996, p. 20).

The Process of Weaning

For about the first six months, breast milk is all that is needed to support growth. Ideally, the baby will continue to benefit from breastfeeding for the first year or so. Indeed, both mother and baby receive nutritional, immunological, emotional, and other benefits for as long as breastfeeding continues.

Weaning is the process whereby infants move away from complete dependence on their mother's milk. The ideal time to wean is when mother and baby are both ready. Because the two parties may be ready at different times, weaning can be either more "baby-led" or more "mother-led." Nevertheless, at whatever age the weaning occurs, it is more comfortable for the mother and easier for the baby if the weaning is gradual. (See CICH, 1996, for tips on weaning.)

Follow-up Support Services

Follow-up support services can be especially useful for breastfeeding families. These services include:

- home visits by public health nurses;
- parent "hot-lines" (i.e. telephone information services);
- breastfeeding and/or well-baby clinics;
- breastfeeding and/or well-baby drop-in centres;
- La Leche League and lay/peer support groups;
- breastfeeding and/or infant care classes;
- advice of physicians who are supportive and knowledgeable;
- advice of certified lactation consultants; and
- follow-up phone calls from hospital clinics, community nurses, and physicians (see Chapter 6).

A list of all breastfeeding support services should be compiled for each community. Breastfeeding committees or formalized networks have been successful in developing, coordinating and maintaining consistent breastfeeding promotion, support, and protection initiatives at the local, provincial, and national level.

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APPENDIX 1

Ten Steps to Successful Breastfeeding

Every facility providing maternity services and care for newborn infants should:

Step 1: Have a written breastfeeding policy that is routinely communicated to all health care staff.

Step 2: Train all health care staff in skills necessary to implement this policy.

Step 3: Inform all pregnant women about the benefits and management of breastfeeding.

Step 4: Help mothers initiate breastfeeding within a half-hour of birth.

Step 5: Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.

Step 6: Give newborn infants no food or drink other than breast milk, unless medically indicated.

Step 7: Practise 24-hour rooming-in.

Step 8: Encourage breastfeeding on cue.

Step 9: Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.

Step 10: Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Source: WHO/UNICEF. *Protecting, Promoting and Supporting Breastfeeding: The Special Role of Maternity Services.* A Joint WHO/UNICEF Statement, Geneva, 1989.

APPENDIX 2

Summary of the International Code of Marketing of Breast Milk Substitutes

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- No advertising of these products to the public.
- No free samples to mothers.
- No promotion of products in health care facilities.
- No company mothercraft nurses to advise mothers.
- No gifts or personal samples to health workers.
- No words or picture idealizing artificial feeding, including pictures of infants, on the labels of the products.
- Information to health care workers should be scientific and factual.
- All information on artificial infant feeding, including the labels, should explain the benefits of breastfeeding, and the costs and hazards associated with artificial feeding.
- Unsuitable products, such as sweetened condensed milk, should not be promoted for babies.
- All products should be of a high quality and take account of the climatic and storage conditions of the country where they are used.

Source: World Health Assembly. *WHO/UNICEF International Code of Marketing of Breast Milk Substitutes*. Geneva, 1981.

APPENDIX 3

Hospital/Maternity Facility Guidelines for the Implementation of the WHO/UNICEF Baby-Friendly Hospital Initiative (BFHI) in Canada

SELF-APPRAISAL PROCESS

The first significant step on the road toward full Baby-Friendly Hospital status is completion of the Hospital Self-Appraisal Tool, included in Part 2 of the BFHI Manuals (see Appendix A). Parts 1 and 2 of the BFHI Manuals contain information on evaluating the *Ten Steps to Successful Breastfeeding* as well as a questionnaire enabling a hospital/maternity facility to review its practices. This initial self-appraisal facilitates analysis of the practices that encourage or hinder breastfeeding. Hospitals/maternity facilities may request information and clarification from the respective Provincial/Territorial Baby Friendly Initiative (BFI) Implementation Committee or the Breastfeeding Committee for Canada (BBC)* at any time.

It may be helpful for the hospital/maternity facility to develop a multidisciplinary committee to address protection, promotion and support of breastfeeding.

The role of this committee might include:

1. acquisition of resources for the BFHI (see Appendix A);
2. education of administrators, colleagues, and consumers about the BFHI;
3. review of breastfeeding initiation and duration rates;
4. review of practices and development of an action plan with time lines to address those practices which require change using the minimum standards of the *Ten Steps to Successful Breastfeeding*; and
5. work with the hospital/maternity facility and community to ensure compliance with the *International Code of Marketing of Breast Milk Substitutes.*

Having accomplished all of the above, the hospital/maternity facility may complete the WHO/UNICEF Hospital Self-Appraisal Tool.

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* The BCC will assume the responsibility for BFHI implementation in a specific province or territory until the respective BFI Implementation Committee is in place.

PRE-ASSESSMENT

If the results of the self-appraisal tool are primarily positive, the hospital/maternity facility requests the Provincial/Territorial BFI Implementation Committee to arrange a pre-assessment. A pre-assessment is required as a mechanism for assuring a more successful external assessment. A pre-assessment consists of an intensive, abbreviated evaluation by a BFHI assessor assigned in collaboration with the BCC. It is strongly recommended that this person has no past or current affiliation with the hospital. The pre-assessment would include detailed discussions with staff, examination of hospital facilities and systems, and review of available documentation regarding training programs, prenatal education, breastfeeding and BFHI policies, etc. A pre-assessment will typically take one full day.

THE PROCESS OF PRE-ASSESSMENT

1. When the hospital/maternity facility considers it is ready for a pre-assessment, a request is submitted to the Provincial/Territorial BFI Implementation Committee.
2. The Provincial/Territorial BFI Implementation Committee sends the hospital/maternity facility a pre-assessment contract in which the hospital/maternity facility agrees to cover all costs of the pre-assessment, as outlined in *Financial Guidelines for a Baby-Friendly Hospital Initiative (BFHI) Pre-Assessment in Canada.*
3. The Provincial/Territorial BFI Implementation Committee forwards the signed contract and completed hospital self-appraisal tool, accompanied by an administrative fee of $100, to the BCC with a request to arrange a pre-assessment.
4. In consultation with the Provincial/Territorial BFI Implementation Committee, the BCC will select an Assessor to conduct the pre-assessment. See *Guidelines for WHO/UNICEF Baby-Friendly Hospital Initiative (BFHI) Assessors and Master Assessors in Canada.*
5. Upon completion, the assessor will submit a complete pre-assessment report to the hospital/maternity facility, the Provincial/Territorial BFI Implementation Committee and the BCC.
6. Should any areas of weakness be identified in the pre-assessment report, the Provincial/Territorial BFI Implementation Committee will provide expert advice to the hospital/maternity facility to address these weaknesses.

EXTERNAL ASSESSMENT

Over a period of two to four days, a team of assessors, under the direction of a master assessor, conducts an extensive assessment of hospital/maternity facility practices and policies and does appropriate interviews as outlined in the WHO/UNICEF Global Hospital Assessment Criteria. The external assessors selected must have no past or current affiliation with the hospital. Random interviews of both staff who work in, and mothers who have delivered in, the hospital/maternity facility will take place. Practices in labour and delivery, postpartum, and special care nurseries will be observed.

THE PROCESS OF EXTERNAL ASSESSMENT

1. If the results of the pre-assessment are primarily positive, the hospital/maternity facility requests the Provincial/Territorial BFI Implementation Committee to arrange an external assessment.
2. The Provincial/Territorial BFI Implementation Committee sends the hospital/maternity facility an external assessment contract in which the hospital/maternity facility agrees to cover all costs of the external assessment, as outlined in *Financial Guidelines for a Baby-Friendly Hospital Initiative (BFHI) External Assessment in Canada.*
3. The Provincial/Territorial BFI Implementation Committee forwards the signed contract, written materials required by the WHO/UNICEF Global Hospital Assessment Criteria (see Appendix B) and the pre-assessment report, accompanied by an administrative fee of $400, to the BCC with a request that an external assessment be arranged.
4. In consultation with the Provincial/Territorial BFI Implementation Committee, the BCC will select a master assessor and a team of assessors to conduct the external assessment. See *Guidelines for WHO/UNICEF Baby-Friendly Hospital Initiative (BFHI) Assessors and Master Assessors in Canada.*
5. Upon completion, the external assessment team will meet with the hospital/maternity facility to discuss preliminary findings. The master assessor will submit a complete external assessment report to the Provincial/Territorial BFI Implementation Committee, which will forward it to the BCC.

6. Following a review of the external assessment report, the BCC, in consultation with the Provincial/Territorial BFI Implementation Committee, will decide if the hospital/ maternity facility will receive Baby-Friendly designation. The Provincial/Territorial BFI Implementation Committee will notify the hospital/maternity facility of the results of the assessment and will send the facility a copy of the external assessment report. A certificate will be awarded and the hospital/ maternity facility will be added to the BCC database of designated Baby-Friendly facilities in Canada.
7. Every two years following receipt of the Baby-Friendly designation, the hospital/maternity facility will report to the Provincial/Territorial BFI Implementation Committee. The purpose of the report will be to ensure ongoing compliance with the WHO/UNICEF Global Hospital Assessment Criteria. The format of the report will be determined by the Provincial/Territorial BFI Implementation Committee.
8. Every five years following receipt of the Baby-Friendly designation, the hospital/maternity facility will undertake a re-assessment, involving a subsequent contract and additional costs to the hospital in order to retain the Baby-Friendly designation.
9. A hospital/maternity facility which does not achieve Baby-Friendly designation may provide the Provincial/Territorial BFI Implementation Committee, within 90 days of receipt of the external assessment report, with a plan of action and timetable to meet the WHO/UNICEF Global Hospital Assessment Criteria.
10. A Certificate of Commitment will be issued to the hospital/maternity facility upon receipt of the plan of action and timetable.
11. If the hospital/maternity facility does not achieve Baby-Friendly designation following the external assessment, the Provincial/ Territorial BFI Implementation Committee will provide expert advice to address weaknesses identified in the external assessment report to the hospital/maternity facility for a maximum of four years from the date of the original contract.

APPENDIX A

The following resources are available from the sources listed:

1. *BFHI Manuals 1 and 2;* and
2. *Breastfeeding Management and Promotion in a Baby-Friendly Hospital*: *The 18-Hour Course*
   UNICEF Canada
   433 Mount Pleasant Road
   Toronto, Ontario M4S 2L8
   Tel.: (416) 482-4444 Fax: (416) 482-8035
   email: secretary@unicef.ca
3. *Protecting Infant Health: A Health Workers' Guide to the International Code of Marketing of Breast-Milk Substitutes*. 8th ed.
   INFACT Canada
   6 Trinity Square, Toronto, Ontario M5G 1B1
   Tel.: (416) 595-9819 Fax: (416) 595-9355
   email: infact@ftn.net

APPENDIX B

The following written materials, required by the WHO/UNICEF Global Hospital Assessment Criteria, certified by an officer of the hospital/maternity facility, must accompany the signed contract for external assessment:

1. A written breastfeeding policy covering all Ten Steps to Successful Breastfeeding as defined in the WHO/UNICEF Baby-Friendly Hospital Initiative, including date of implementation.
2. A written curriculum for training in lactation management given to all hospital staff who have any contact with mothers, infants and/or children (including a description of how instruction is given and a training schedule for new employees).
3. An outline of content to be covered in antenatal breastfeeding education received by pregnant women.
4. All educational materials on breastfeeding provided to pregnant women and new mothers.

Breastfeeding Committee for Canada (BCC)
Box 65114, Toronto, Ontario M4K 3Z2
Fax (416) 465-8265
email: bfc@istar.ca
http://www.geocities.com/HotSprings/Falls/1136/

APPENDIX 4

Ten Steps to Baby-Friendly Communities

Step 1: UNICEF designates all community hospitals delivering maternity services as "Baby Friendly."

Step 2: All health care facilities promote, protect, and support breastfeeding.

Step 3: Health care institutions work together to increase the availability of breastfeeding support.

Step 4: The community is informed as a whole about the benefits of breastfeeding and the risks of not breastfeeding.

Step 5: Attitudes are addressed within the community that perceive bottle feeding as the norm and provide education directed at changing these attitudes.

Step 6: Communities recognize the importance of supporting the mother-baby relationship.

Step 7: Education is provided about breastfeeding as the natural and normal method of infant feeding.

Step 8: All public and private facilities, including parks and recreation centres, restaurants, and stores, support the need to be mother- and baby-friendly.

Step 9: Work settings promote breastfeeding through the provision of extended maternity leave and/or provide facilities for mothers to express milk and maintain their breastfeeding relationship.

Step 10: Support is given to women who do not meet their breastfeeding goals so as to resolve their feelings and to find the most suitable alternatives.

Adapted from: Jones F and Green M. *British Columbia Baby-Friendly Initiative: Resources Developed Through the BC Breastfeeding Resources Project*. Vancouver: BC Baby-Friendly Initiative, 1996.

APPENDIX 5

Infant Nutrition Resources: Assessment Guide

Does this resource truly promote breastfeeding?

Title: ....

Study the resource carefully and complete this assessment to identify resources that are supportive of breastfeeding. Some statements may be confusing or create a negative impression. Examples of these statements are provided.

Look through your resource and check the squares ☐ provided below. Examine your resource for other examples and write them in the space provided.

	Yes	No	N/A
1. Does this resource suggest hardship for breastfeeding mothers? Example: "You may opt to room in or to get all the rest you can before going home." Your example:	☐	☐	☐
2. Does this resource suggest possible harm to breastfed infants? Example: "Some mothers express concern that they will injure their babies if they fall asleep while nursing in bed." Your example:	☐	☐	☐
3. Does this resource use misleading visual materials? Example: Photo shows inappropriately positioned infant at the breast. Your example:	☐	☐	☐
4. Does this resource raise concerns about breastfeeding? Example: "There is no reason why a woman should not nurse her baby while she is menstruating." Your example:	☐	☐	☐
5. Does this resource create ambivalence about breastfeeding? Example: "It is no longer considered in poor taste for a mother to nurse in public." Your example:	☐	☐	☐
6. Does this resource make breastfeeding seem complicated? Example: Resource uses technical words and long explanations. Your example:	☐	☐	☐

	Yes	No	N/A
7. Does this resource suggest that bottle feeding is more common for newborns than breastfeeding? Example: "Traditional bottle feeding" is a section title. Your example:	☐	☐	☐
8. Does this resource give reasons to stop breastfeeding? Example: "You cannot safely take some medications while breastfeeding." Your example:	☐	☐	☐
TOTAL	......	......	......

There can be a maximum of only one YES if the resource promotes breastfeeding.

Does this resource truly promote breastfeeding? ☐ Yes ☐ No

Does this resource comply with the WHO International Code of Marketing of Breast Milk Substitutes — Article 4?

	Yes	No	N/A
1. Does this resource always support breastfeeding (i.e. it does not give a conflicting message such as "breastfeeding is best, but bottle feeding is okay too")?	☐	☐	☐
2. Does this resource outline the benefits of breastfeeding and the superiority of breast milk?	☐	☐	☐
3. Does this resource give accurate instructions on how to breastfeed?	☐	☐	☐
4. Does this resource include the detrimental effects on breastfeeding of introducing partial bottle feeding?	☐	☐	☐
5. Does this resource include techniques for expression of breast milk?	☐	☐	☐
6. If this resource includes information on infant formula, does it include the cost?	☐	☐	☐
7. Does this resource include information on how to manage breastfeeding when returning to work or school?	☐	☐	☐
8. Does this resource exclude specific brand names for formulas?	☐	☐	☐
9. Does this resource exclude pictures of infant formulas?	☐	☐	☐
10. Does this resource exclude coupons, free samples, or other marketing techniques?	☐	☐	☐
TOTAL	......	......	......

Compliance with WHO Code: maximum of 2 NO scores

Does this resource comply with the WHO Code? ☐ Yes ☐ No

Source: This guide has been adapted with permission from that developed by the Breastfeeding Promotion Steering Committee of Manitoba, Winnipeg. The original guide was adapted from: Auerbach KJ, Beyond the issue of accuracy: evaluating patient education materials for breastfeeding mothers. *J Hum Lact* 1988; 41(3): 105-10.

APPENDIX 6

Guidelines for Taking a Feeding History

A mother's concerns frequently centre around the adequacy of the milk supply. The baby's general behaviour pattern as well as weight gain are helpful indicators to perceived, potential, or real problems. A feeding history should include the following:

- age of baby
- weight at birth and current weight (a gain of 1/2 to 1 kg [1 to 2 lb.] per month is acceptable; birth weight is regained by two to three weeks of age)
- how often a mother is nursing
- is baby experiencing milk ejection?
- is baby using both breasts?
- how long the mother is nursing
- number and consistency of baby's stools per day
- how many wet diapers? colour, amount, and frequency of urine?
- additional formula feeding? how often?
- mother taking any medication?
- caffeine, alcohol being used?
- mother smoking?
- is baby alert, with good colour, and active for age?
- baby's feeding pattern:
  - settles in and nurses with gusto?
  - takes time?
  - tastes, gulps, and tastes again?
  - cries during feeding?
- mother's health
  - anxious/depressed?
  - overly fatigued?
  - poor nutrition/fluid status?
  - history of severe postpartum hemorrhage?
- family supportive/non-supportive

It is important to always explore the mother's perception of any problem and to also ask "What makes you feel this has happened?" The age of the baby taken in the history will be a clue to the intervention, as well. It is usually helpful to observe the infant and mother breastfeeding.

Adapted from: Canadian Institute of Child Health. *National Breastfeeding Guidelines for Health Care Providers*. Ottawa: 1996, p. 139.

APPENDIX 7

Breastfeeding in the First Few Weeks

A baby who is doing well:

- has soft or loose bowel movements
  - 1 to 2 large or several small bowel movements for the first 2 to 3 days
  - after the first 2 to 3 days, 2 or more bowel movements in 24 hours
- has pale, light colour urine with almost no smell
  - in the first 3 days, 1 to 2 wet diapers per day (occasional brick red staining is normal)
  - 6 wet cloth diapers as the milk supply increases (usually by the 4th or 5th day)

  Note: This is easier to notice in cloth diapers. A facial tissue can be placed inside disposable diapers, if you are not sure.
- is feeding well at least 8 to 12 times in 24 hours
  - listen for swallowing or quiet "caw" sound
- is back to birth weight by about 2 weeks of age

Breastfeeding is the best and most natural way to feed your baby. You will be able to produce enough milk. The keys to success are early, frequent feeding and proper positioning of the baby at the breast.

Get help if any of these signs listed above are not present, or if:

- your baby is very sleepy and hard to wake for feedings
- your nipples are sore and do not start to get better
- you have fever, chills, flu symptoms, or a red painful area on your breast

  If you have these symptoms: nurse often; apply warm, wet towels; and get lots of rest. Phone your doctor or midwife if you do not feel better in 6 to 8 hours.

Help is available from:

Public Health nurse ....
Hospital/Children's hospital ....
La Leche League ....
Warm-line/Hot-line ....
Lactation consultants ....
Your midwife or doctor ....
A breastfeeding-support clinic/drop-in centre ....

Source: Adapted with permission from the Breastfeeding Promotion Committee of Ottawa-Carleton, 1999.

APPENDIX 8

Expressing and Storing Expressed Breast Milk

Expressing and storing your milk allows your baby to get breast milk when you are separated from each other. If you do express milk, it's best to wait until breastfeeding is going well (after 4–6 weeks), before giving your baby a bottle*. Many mothers find it best to express milk in the morning, after a feeding, or when their breasts feel fullest.

Some mothers prefer to take their baby with them when they go out and don't need to express their milk.

Use a Clean Container

- Wash your hands.
- Use containers such as glass (e.g. small canning jars or baby bottles) or hard plastic containers or bags made for freezing breast milk (not disposable bottle liners).
- Wash the jars, bottles and lids with hot soapy water and a brush.
- Rinse in hot running water and air dry.

  OR
- Use the sani-cycle on the dishwasher.

For premature or hospitalized infants, containers should be *sterile*. *To sterilize:*

- Fill a large pan with enough water to cover washed containers. Bring to a boil and continue to boil for five minutes.

Expressing Breast Milk

- Label storage container with date before expressing milk.
- Wash hands with soap and water.
- Sit somewhere comfortable and have something available to drink.
- Stimulate the flow of milk (milk ejection reflex) by:
  - applying warm, moist heat to the breast (e.g. warm wash cloths or shower)
  - supporting the breast with one hand and using the other hand to massage in small circles or stroke lengthwise from chest wall to the nipple.
- Express milk by hand or with a pump.

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* However, offering your baby bottles of breast milk or formula at any age can affect your milk supply and the baby's interest in breastfeeding.

EXPRESSING BY HAND

- Wash your hands.
- Express the milk into a clean container.
- Cup your breast in one hand and place your thumb and fingers at least one inch back from the base of the nipple.
  - Support the breast from below.
  - While pressing back against the chest wall, gently squeeze rhythmically with your thumb and fingers.
  - Move your thumb and fingers around the areola to be sure that milk is expressed from all the ducts. It may take your milk a few minutes to flow.
- Express from each breast for about five minutes, then go back and repeat on each breast again.
- At first you may collect only a little milk. The flow will increase with time and practice.

EXPRESSING WITH A PUMP

A variety of pumps are available for rent or sale from lactation consultants, hospitals, medical supply outlets, drug stores, and some children's stores. *Lactation consultants provide instructions and support for the pumps they supply.* You can consult the Health Department, a lactation consultant, La Leche League, nurse, or midwife about which pump is best for you.

Breast Pumps

Full-size Electric Breast Pumps

- Recommended when baby is temporarily unable to breastfeed (e.g. preterm or sick baby) or when baby is not breastfeeding effectively.
- Double pumping saves time (e.g. 10–15 minutes for double pump, 20–30 minutes for single pump).
- These are usually rented: costs include kit purchase, rental and deposit.
- Some insurance policies may cover the cost.

Battery-operated and Small Electric Pumps

- For short-term and occasional use.
- Portable but noisier and more expensive than hand pumps.
- May require batteries.
- Some pumps may hurt and may not work as well as others, so check with your care provider before purchasing.

Hand-operated Pumps

- For short-term, occasional use.
- Simple to operate and clean.
- Portable and the least expensive.
- Some have adjustable settings for suction pressure.

Follow pump manufacturer's instructions for the *safe operation and cleaning* of pumps. Do not exceed recommended pumping pressures. *After every use*, wash the pump parts that come into contact with your milk in hot, soapy water. Rinse and leave to air dry. These parts should also be sterilized once a day: boil for five minutes in enough water to cover the equipment.

Do not use pumps with rubber bulbs:

- The milk may flow into the bulb and it is very hard to clean.
- These pumps are uncomfortable and may damage your nipples.

BREAST MILK STORAGE

For a premature or hospitalized baby:

- Use a fresh, sterile container.
- Refrigerate milk within one hour after pumping.
- Use or freeze the milk within **48 hours.**

Refrigerator

- premature or hospitalized baby: 48 hours
- healthy baby: up to 3 days

In Freezer on Top or Side of Fridge

- for 2 to 3 months

Deep Freeze at -18°C (O°F)

- for 6 months

For a healthy baby:

- Use a clean container.
- Refrigerate the expressed milk.
- Use fresh within **3 days**, or freeze.
- Cooled breast milk may be added to a partly filled container of frozen milk.

- When freezing milk, do not fill containers to the top. Milk expands when it freezes and may crack the containers.
- Store your milk at the back of the fridge or freezer where it will stay coldest. Do not store it in the door as it is not cold enough.
- Put your milk up on a shelf or box if using a self-defrosting freezer. The bottom warms up to allow the defrost cycle to work.
- Frozen milk may be thawed in the fridge and used within 24 hours. If warmed for a feeding, use it within one hour or throw it out.
- Milk separates into layers. Mix well before use.
- Thawed milk may taste or smell different than fresh, but it is still good.

Longer storage times may be recommended by other sources. Guidelines in this pamphlet are conservative, and may change as more research is done.

WARM AND SERVE STORED BREAST MILK

- If milk has been refrigerated, place the container under warm running water for a few minutes until milk tested on your arm feels like room temperature.
- If milk has been frozen, place the container with frozen milk in warm water for five minutes. Shake to re-mix the fat.
- *Caution. Do not microwave. This may cause hot spots in the milk which can burn your baby.*

Need More Information? Call: ....

Developed by the Breastfeeding Promotion Committee of Ottawa-Carleton, a sub-committee of the Perinatal Committee of Eastern Ontario, 1999. Reprinted with permission.

APPENDIX 9

Ten Steps to Creating a Mother-Friendly Workplace

1. Ensure that workers know about Canada's existing maternity and parental leave policies.
2. Offer flexible work hours to breastfeeding women, such as part-time schedules, longer breaks, and job sharing.
3. Ensure that women are aware that they have full job security and protect this right.
4. Support affordable infant and child care at or near the workplace, and provide transportation for mothers to join their babies.
5. Provide daily breaks for breastfeeding or expressing breast milk.
6. Provide comfortable, private facilities for expressing and storing breast milk and for breastfeeding.
7. Encourage co-workers and management to have a positive, accepting attitude toward breastfeeding colleagues.
8. Keep the work environment clean and safe from hazardous wastes and chemicals.
9. Inform women workers and unions about maternity-leave policy and other rights.
10. Encourage a network of supportive women in unions or worker's groups who can help women to combine breastfeeding and work.

Adapted from: Jones F, Green M. *British Columbia Baby-Friendly Initiative: Resources Developed Through the BC Breastfeeding Resources Project*. Vancouver: BC Baby-Friendly Initiative, 1996.

Family-Centred Maternity and Newborn Care:
National Guidelines

— CHAPTER 8 —

Loss and Grief

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Introduction

Supporting families through their loss and grief is an integral part of family-centred maternity and newborn care. Maternal and newborn units therefore need to incorporate a system of caring for loss at any time along the maternity continuum.

Each year in Canada, a significant proportion of the babies conceived will not survive. By way of definition, perinatal loss is associated with miscarriage, neonatal death, stillbirth, and therapeutic abortion. (See Glossary in Appendix 7.) Loss, and hence grief, may also coincide with the birth of a preterm infant, an infant who has suffered complications, or an infant with congenital anomalies. It may occur, too, within a family who is giving up a child for adoption (Panuthos and Romeo, 1984).

The emotional impact of perinatal loss is felt by parents, family, friends, and the health care providers caring for the woman and family. Frequently, parents and families will not have experienced a death in the family and are unfamiliar with the grieving process. In addition, many societies view death before birth as a non-event, placing less significance on perinatal death than on the death of an older child or an adult (Brown, 1991).

Grief is the normal, healthy, healing, and loving response to the devastation of losing a loved one. Grief is not an illness, or something to be cured or taken away. Good grief entails remembering and "reliving" — a notion that challenges the unthinking advice often given to parents who have lost a child, such as "keep busy"; "you are young, you can have another"; "you have others"; or "it's all for the best." Appropriate support for the grieving process assists families in acknowledging the profound impact of their loss and integrating that loss into their daily lives. It is misleading to think of grief as a static "condition" to be resolved. Grief must be viewed as a process — affected by many influences, including any previous (or subsequent) experience that the bereaved may have had with loss.

Each parent has a unique way of grieving. Consistent with the principles of family-centred care, the role of health care providers and institutions is to support grieving parents and families and to enable them to experience the rituals that are important to them. The families need to be fully and accurately informed about the choices at hand. Institutional practices, protocols, and belief systems can be helpful, unhelpful, or positively harmful to families at a time when what they most need is understanding, compassion and a sense of control at this time of their lives.

At times, regionalization of maternal and newborn care has resulted in the concentration, in certain centres, of families who are experiencing loss. For centres where that is the case, the incongruity of the co-occurrence of birth and death requires special preparation on the part of caregivers, as well as development of special resources for grieving parents and their families. Many professionals work with individuals or families who have experienced a perinatal loss. These include spiritual advisors, social workers, nurses (hospital and community), clinical nurse specialists, midwives, physicians, psychologists, and other bereaved parents. It is important that representatives of these disciplines work together as an interdisciplinary team. Communication is critical in each situation so that confusion can be minimized and care optimized. Families experiencing perinatal loss will benefit greatly from the establishment of a Perinatal Loss Review Team, comprising representatives from the community-based bereavement support group, pastoral care, the maternal and newborn nursing and medical divisions, public health nursing, and social work. Others, such as local funeral directors and coroner representatives, may be involved as necessary. Regular meetings of this team to consider the parent's experiences, as well as the hospital practices and facilities relating to perinatal loss, will facilitate development of family-centred care.

After a perinatal loss, parents will have choices to make, wishes to express, and expectations to meet. Health care providers must find ways to fulfil these expectations and to make this a positive experience that promotes the well-being of the entire family. In order to achieve this, some institutions have established a Bill of Rights for Parents and Infants. Tables 8.1 and 8.2 present examples of these rights.

Table 8.1 Rights of the Infant

- To be acknowledged by name and sex
- To be treated with respect and dignity
- To be with the grieving family whenever possible
- To be recognized as a person who has lived and who has died
- To be remembered with specific mementos (footprints, hand prints, pictures, clothes, name band, ultrasound picture)
- To be nurtured (wrapped, dressed, cleaned)
- To be buried/cremated
- To be remembered

Source: Women's College Hospital. *Rights of the infant at the hospital: At the time of death*. Toronto: Women's College Hospital, 1984. ©Women's College Hospital

Table 8.2 Rights of the Parent

- To see, to touch, to hold, to nurture their child with no limitation as to time or frequency
- To be fully informed about the baby, the cause of death, and the process of legitimizing the death (i.e. the funeral)
- To have written and verbal information about:
  - the choices available for the burial or funeral
  - the supports available to family members, and
  - the necessary legal information (e.g. timing of burial, birth registration)
- To receive mementos of their baby (e.g. footprints, picture, certificate of life)
- To acknowledge the life and death of their child — a person in a family
- To choose any type of burial, cremation, or other funeral service
- To be heard and listened to by caring professionals, without judgment or prejudice
- To have staff who are empathetic, caring, and sensitive to individual responses, behaviour, and choices
- To be treated with respect and dignity
- To have family and/or friend support at any time — if the parent wishes
- To seek religious or cultural support for their choices and to be treated with cultural and religious sensitivity
- To be aware of the grieving process — to be able to grieve openly or quietly and to be informed of, and understand, the feelings and emotions generated by loss
- To understand their future options regarding autopsy and genetic counselling
- To be informed about parent support groups
- To receive follow-up supportive care (at the hospital, primary care practitioner's office, and/or home) by telephone or by visit
- To have an opportunity to evaluate their hospital and community experience

Source: Women's College Hospital. *Rights of parents at the hospital: At the time of the baby's death*. Toronto: Women's College Hospital, 1984. ©Women's College Hospital

Types of Perinatal Loss

Perinatal and childbearing losses take several forms. For the parents, the event precipitates a crisis. Most have been joyfully anticipating a healthy pregnancy; the birth of a healthy child; and a long, healthy life for their newborn baby. They are now forced to cope — perhaps for the first time — with intense feelings of loss. They may have few family members or friends as support through this traumatic event. Indeed, for some, it may be another in a long series of losses. Others may have had ambivalent feelings about the pregnancy and may now feel guilty.

Miscarriages are probably the least acknowledged and most misunderstood of all pregnancy-related deaths; yet it is estimated that they end as many as one third of all pregnancies. Miscarriages can elicit feelings of failure, guilt, or responsibility for the loss; a loss of faith in one's physical body; and conflicts in marriage and family relationships (Panuthos and Romeo, 1984).

Sometimes parents experiencing a *stillbirth* may be unaware that their baby has died and will continue the labour normally, still expecting a healthy baby. Other parents realize that their unborn baby has died. In many cases, the cause of stillbirth is unknown, and the parents will constantly wonder what caused the death. Emotions such as guilt and depression can result from both known and unknown diagnoses (Panuthos and Romeo, 1984).

There are many causes of *neonatal death*. Some babies may be born ill, live a short time, and then die; others may die unexpectedly, as happens with SIDS (sudden infant death syndrome).

Women who decide to have a *therapeutic abortion* have made an informed, but difficult, choice — one based on their life circumstances, their own health, and the potential health of the baby. They may or may not be supported by family and friends in their decision, and may feel they cannot share their feelings of loss.

A *preterm birth*, particularly when the infant has a life-threatening illness, is often associated with anticipatory grief and fear of future developmental difficulties; but there is also hope for survival. When the infant's survival is tenuous and prolonged, eventually resulting in death, parental grief and anguish may be extreme and the stresses on the staff profound.

The birth of a *child with a congenital anomaly* is another type of perinatal loss. With today's better fetal assessment techniques, more parents are prepared for the birth of a baby with anomalies. However, many parents will still be shocked and surprised at the unexpected chronic sorrow that can result from giving birth to an infant who is unable to become their "wished for child." In addition, some of these anomalies may be life-threatening.

Women who give up their baby for *adoption* experience a unique type of perinatal loss. Often, they are unsupported by the child's father, family, and friends. These women experience the usual physical and emotional postpartum changes; however, because these may be unacknowledged or unsupported by others, they may have to suffer their loss in silence (Panuthos and Romeo, 1984).

Assessment

Health care providers have a major role to play in assessing the family's grief reaction, in determining the amount and kind of support needed, and in providing that care and support. An ongoing process of assessment is carried out to ensure that the care and support offered, in both hospital and community, is appropriate. Although not all families will want or require the assistance of a health care provider, these individuals can be valuable allies to the grieving family and help provide appropriate support, referrals, and information.

Assessment of the meaning of the loss precedes planning for support systems and resources. This means exploring, separately, what the loss means to the woman and her partner; to the parents as a couple; and to family and friends. The woman and her partner may lose the image of themselves as parents. The woman herself may suffer loss of self-esteem, while her partner may feel he has lost his role as "protector" and "provider"; together, they may feel they have lost a dream. This is often the first time a couple will have had to face a major crisis, and they may be surprised to find differences in their grief and coping styles. Nonetheless, without this understanding of meaning, future plans and discussions are likely to be inappropriate and even detrimental to the healing process of grief (Kubler-Ross, 1972).

The *process of grieving* has been described in several ways. Most experts, though, describe it as a *process*, with phases or tasks. Identifying this process may help parents who are grieving a perinatal loss. Worden (1991) outlines the tasks of grieving (see Table 8.3). These tasks are not clearly separated; nor are they always sequential or experienced at a particular rate or in the same way (Kubler-Ross, 1972). In effect, there is no one "right way" to mourn, and individual expressions of grief are not "wrong."

Table 8.3 Worden's Tasks of Grieving

Task 1:	**To accept the reality of the loss.** Even when death is expected, there is always a sense that it hasn't happened. The first task of grieving is to face the reality that the person is dead.
Task 2:	**To work through the pain of grief.** It is necessary to acknowledge and work through the pain or it will manifest itself through other symptoms. This may be difficult if the people around the parents feel uncomfortable with their feelings, and give them the message that their grief is unnecessary.
Task 3:	**To adjust to an environment in which the child is missing.** The parents need to search for meaning to the loss in order to make sense of it.
Task 4:	**To emotionally relocate the child and move on with life.** This task does not mean giving up their relationship with their child. Instead, it means finding an appropriate place for the child in their emotional lives — a place that will enable them to go on living effectively in the world. The task is to develop some sort of ongoing relationship with the thoughts and memories associated with the child, but to do this in a way that allows them to continue on with their lives after the loss.

Adapted from: Worden JW. *Grief counselling and grief therapy. A handbook for the mental health practitioner*. 2nd ed. New York: Springer Publishing Company, 1991. Used by permission of Springer Publishing Company Inc.

The various elements of grief and loss assessment are presented in Table 8.4.

Table 8.4 Elements of Grief and Loss Assessment

The **sociocultural assessment** addresses factors such as:

- the mother's/father's past experience and customary way of dealing with death or other crisis situations;
- the cultural or religious practices that the parents may wish to honour or that may constrain them;
- the past perinatal losses and other losses that may influence the grieving process;
- the relationship between the woman and her partner, her children, and the grandparents (and the involvement the parents wish the latter to have in the grieving process);
- the family's support system; and
- the ages of the siblings and how the parents plan to explain the death to them.

The **psychological assessment**:

- helps to determine where the family and woman are at in their grieving process; and
- can use Worden's tasks of mourning as a framework to help families and supporters accept their feelings, understand the importance of expressing these feelings, and gain hope that the pain will diminish.

The **physical assessment** focuses on:

- the physical effects of pregnancy, labour, and birth and the state of the mother's health during the early postpartum period (this might include such aspects as excessive bleeding or cramping following a D+C, exhaustion following a long and difficult labour, pain following a cesarean section, and breast milk production);
- the drugs that a woman may have been given that might dull her perception of events and limit her ability to recall the details of her loss; and
- recognition of any health problems that might affect the mother's ability to conceive and bear children in the future (Kubler-Ross, 1972).

The **spiritual assessment** may be overlooked, especially if the woman and her partner do not profess affiliation with an "official" group. However, the spiritual nature of a person is broader than organized religions: all persons have a spiritual self whose needs are likely to be heightened at the time of perinatal loss. It is thus vital to determine:

- what it is that gives meaning to life for the woman and her partner;
- the kind of faith held by the woman and her partner, and the strength of this faith;
- if their faith is part of an official religious affiliation — what special rites are necessary to fulfil the beliefs of this religion;
- what meaning the parents place on this loss; and
- to what factors they attribute the death.

Facilitating and Supporting Grieving

Five Cs have been deemed necessary when providing sensitive support to grieving families: *comfort, caring, communication, compassion* and *continuity* (Jumenez, 1982). A number of other aspects of caring are considered to be important as well. Leon (1992a) summarizes them as the ability to:

- understand the personal meanings of the loss;
- be accepting of the parents' feelings;
- offer realistic support, nurturing, and protection;
- facilitate the expression of grief; and
- help maintain the family's faith in their capacity to come through their loss as functioning, whole people.

When supports and interventions are discussed and planned, the goals of care should be to promote not only personal choice and the decisions made, but also the dignity of (and respect for) the baby, parents, and family. The role of health care providers is to enable parents to do "what they need to do" at the time of death.

Interventions for supporting loss and grief have been classified as supportive, informational, and facilitative (Brown, 1991). They are outlined in Table 8.5.

Table 8.5 Interventions for Supporting Grief

Supportive interventions focus on reassuring parents that their expressions of grief are encouraged and accepted — no matter the form. Health care providers also need to take the time just to "be" with grieving parents. Grieving parents will likely want privacy, but they should not be abandoned or ignored.

Informational interventions include providing information about grief and what parents can expect in terms of their own responses. Parents need to know that their reactions are normal, that there is no timetable for grieving. Couples and families need to know that men and women grieve differently. Other interventions entail verbal and printed information about burial and cremation procedures, memorial services, legal requirements, hospital regulations, and community services including bereaved parent support groups.

Facilitative interventions are directed at making the loss real, coordinating care, helping families navigate the legal requirements, and helping them prepare for the future. Activities such as filling out the necessary forms, contacting a chaplain or funeral director, or "running interference" for the client can all be supportive roles for health care providers.

Adapted from: Brown Y. Perinatal death and grieving. *Canadian Nurse/L'infirmière canadienne* 1991; 199: 27.

Supporting the Family

It is crucial to keep parents informed throughout the loss experience. It is also critical that the mother's main support person remain with her. As well, parents may wish to have an identified hospital staff member or a member of a perinatal support group with them for support.

If at all possible, an explanation of the birth and the circumstances surrounding the death should be provided to parents when they are together. Writing down the information for them and encouraging them to draw up their own questions for clarification is sometimes helpful. Providing privacy for a family who would like to be with their baby at the time of death, and afterwards, can be an important intervention. A quiet, if at all possible, private room that is part of the maternal and newborn unit should be made available. Overnight accommodation, if available, should be provided for the mother's partner or another supportive person.

A mother needs the option of staying in the maternal and newborn area or being transferred to another area of the hospital, where the staff are skilled in caring for families experiencing perinatal loss. She should not be expected to share a room with another mother and baby.

It is often helpful for parents to see their infant; the decision, however, is up to the parents. Some parents may want to bathe and dress the baby themselves. Parents often say that it is important to see the baby's entire body — that it reinforces the idea that their baby was indeed a real little person who lived and died. Some parents may wish to provide special clothing, blankets, or toys for their child. Siblings may wish to contribute poems, letters, artwork, or toys as an expression of affection. Whereas physical contact with the dead child is often a valuable way of expressing grief, it is not the only outlet; nor is it optimal for all parents. Parents who decide not to view the dead baby are not necessarily in danger of complicating their grief process. No parent needs to foster a burden of guilt.

Parents may need time to reconsider their initial decision not to see the baby. There is no rush. Other parents may wish to see their baby several times before leaving the hospital. Likewise, parents may want their relatives to see and hold the baby.

Parents should be offered photographs and other mementos of the baby (see Table 8.6). They may also wish to take photographs themselves. Parents may not want the photographs at this time, but they should be kept on file in case the parents change their minds. Written information on how to access the photographs at a later date should be given to the parents. If it is culturally appropriate, parents can be encouraged to give the baby a name.

Health care providers can facilitate an initial contact between the grieving parents and parents who have experienced a similar loss. If the parents wish, a member of a parent support group can be asked to come to the hospital. If the parents do not feel ready for such contact, written information can be provided. The family is then free to contact the support group at a later date.

Communication

Health care providers can play a major role in supporting partners — allowing them to talk about their feelings, or to express their feelings in a way that is appropriate for *them* (e.g. by writing or drawing). In fact, parents should be encouraged to communicate with each other, to share their feelings, and, if possible, to talk about their loss. These feelings often include anger; health care providers must be prepared for this reaction and accept it. Stress on the family, and the relationship, is a major factor to consider when caring for the family. As already mentioned, men and women often react to loss and experience their grief quite differently. Because the mother physically carries the baby, she experiences a unique physical and emotional relationship with the unborn baby.

If there are other children in the family, the parents will need to consider how and what to tell them. Health care providers can help the parents decide how to share the information. The best practice is to be open and honest. Children need clear reasons about how and why the baby died so they do not invent their own reasons. It is important to explain that the baby has *died*; they should not be told that the baby has simply "gone to sleep" or been "lost." Otherwise, children may worry about their own safety or wonder if mum and dad will also get "lost" or "go to sleep."

Some parents may be unable to express their feelings at the time of their loss. Indeed, it may be some time before they can share their feelings, even with close family members or a partner.

Parents will need help in preparing for the reactions of family, friends, and the community. A discussion of potential responses and ideas may be of use. Sometimes comments, though well meaning, can be hurtful; parents need to be prepared for this. It is also helpful to have the parents identify what assistance would be useful at home (e.g. help with meals, housework, and the care of other children). Parents need to understand too that, because of their trauma, they should not be too hard on themselves. They cannot expect to cope with as much responsibility as was possible before their loss.

Active listening is particularly important when working with grieving families. Health care providers need to focus on what the parents are actually saying and not on what they (the providers) think they should be saying. The danger lies in pushing parents to make decisions quickly and not paying attention to their real emotional needs and the expression of these needs. It is often necessary to repeat information. Families may find it difficult to understand and make use of the information provided. But there is no rush. The crux of the matter is that the parents need time to make informed decisions.

Cremation, Burial, and Funeral Options

Parents will need explanations about cremation, burial, and funeral options, as well as autopsies and the necessary legal documents. They may require assistance to reach decisions and complete the necessary documentation. (See section on Laws in this Chapter, p. 19.) It is important to encourage both parents to become involved in the burial plans and to offer assistance in making the arrangements; this may include finding out about local funeral homes. The parents' relatives may be particularly helpful with this aspect of care; it can give them something useful to do at a time when they are feeling helpless.

Remembrances

Parents should be provided with remembrances, including keepsakes, in memory of the baby. These can be given to the parents at the time of the infant's death or at a later date. Examples of possible remembrances are listed in Table 8.6.

Table 8.6 Remembrances

- Identification bracelet
- Bassinet card with infant's name, date of birth, date of death, and weight
- Lasting photos of the infant. If the parents decline the photos, advise them that they will be placed in the hospital record for future pick-up. Some parents will ask for pictures of their baby both dressed and undressed.
- Photos of the infant with parents and significant others who are present (if the parents desire)
- Footprints and hand prints on a card
- Lock of hair, according to the parents' wishes
- Ultrasound picture
- Measuring tape
- Hat and booties, blanket, christening dress, the clothing the baby died in, other clothing
- Poems, special notes to the family
- Certificate of death and a photocopy
- Autopsy results
- Certificate of life (to be created by the institution)
- Mementos from the "naming ceremony" (candle and certificate)
- Any other special items that the family may wish to keep

Special Considerations for a Woman Who Has Had a Miscarriage

Women experiencing a miscarriage may be admitted to the hospital through their physician's office, via the emergency department, or straight from home. It is crucial that they be treated with sensitivity and that the emotional aspects of their loss, as well as their physical symptoms, be dealt with. Women have often stated that if they come to the emergency department when having a miscarriage, the attending health care providers seem to downplay the event. Clearly, it is imperative in these circumstances that both women and families have appropriate referrals to help them deal with their loss.

Because viewing, holding, and having private time with the baby may be impossible, health care providers should spend time with the parents talking about the baby and the parents' broken hopes and dreams. It is important to encourage the parents to honour their baby in some way; for example, they might name the baby or make a keepsake album with cards and perhaps an ultrasound picture.

Staff members should always use the term "miscarriage." Every effort should be made to avoid the word "abortion," as this may lead to confusion, misunderstanding and unnecessary pain. Recommended terminology includes such terms as "threat of miscarriage," "incomplete miscarriage," or "silent miscarriage," rather than "missed abortion."

Whenever possible, a woman experiencing a miscarriage should be offered the option of watchful waiting, a surgical D+C or a medical D+C. Many women understandably fear a surgical D+C for it often involves general anesthetic and further loss of control. When explaining a surgical D+C, staff should note that this procedure helps to bring about closure and may reduce the risk of bleeding and infection. Sometimes women think that a surgical D+C involves scraping the baby out or removing decayed tissue. Perhaps the term "removing any fragments of the placenta" would be more consistent with the goal of "gentle truth telling."

Sometimes, early pregnancy loss is discovered during an ultrasound. It is important that the woman be informed of the loss clearly at the time of the scan. The physician conducting the ultrasound should tell the woman of the findings and contact her physician as soon as possible, so that ongoing care and support can be coordinated. Providing immediate emotional support is critical and may ease a woman and her partner's natural reaction to the loss. It is crucial, too, to express sympathy, provide an opportunity to ask questions, and offer a quiet place for initial reflection. It may also be important to reassure the woman that she is not to blame for the miscarriage (Franche et al., 1997). The parents should not be left alone; that is, not sent home alone or sent to the hospital to check in alone. A relative, friend, neighbour, support person, or hospital volunteer should be asked to accompany the parents.

Most women and partners say they need information about the cause of the loss and about any further care required. In general, the woman's own physician, rather than the ultrasonographic physician, is better placed to provide the detailed information required (Franche et al., 1997).

Special Considerations for Parents of Babies Born Prematurely or with a Congenital Anomaly, and Babies Who Have Suffered Complications

Parents whose babies are born prematurely, suffer complications, or present with congenital anomalies have special needs. Along with the joy of birth and the delight of welcoming a new baby into the family, these parents may experience a sense of loss: the baby is not as they had expected. Health care professionals need to rejoice with the parents in the birth of their baby, while simultaneously acknowledging and validating their loss and grief. Parents will need to receive as much information as possible regarding their child's condition. Appropriate and supportive community referrals will have to be made by hospital staff. In the end, parents may benefit from the support of other parents whose children have similar anomalies.

Bereavement Guides

It may be useful to use a form that outlines recommended care for bereaved families. Staff members can then offer parents all pertinent, available options and ensure that the appropriate community links are established. Each centre should develop its own tools, thereby developing aids specific to the institution and the community. See Appendices 1 to 5 for examples of such forms.

Cautions

Health care providers should remember that grieving is unique to the individual, that it cannot be normalized with rules and regulations as to what parents should or should not do.

> *"Before grieving can be labelled normal, disturbed, or distorted, there must be an understanding of what the loss means to the bereaved and how their thoughts, feelings, and actions attempt to cope with or avoid that loss. For the caregiver, this understanding means feeling with the bereaved and sharing their pain, without being consumed by its intensity... [it means] offering empathy... We need to distinguish carefully an approach that genuinely promotes empathy from one that is programmed" (Leon 1992b).*

The quality of the relationship between the provider and parents is more important than rigidly following a protocol. It is critical that elaborate instructions for caregivers — do's and don'ts of what to say and lists of what needs to be done — should never dictate parent-provider interactions. Applying protocols rigidly may derail the caregivers' empathy, leaving the bereaved parents even more bereft.

Religious and Cultural Diversity

Canada is a multicultural nation. Each culture and religion has its own beliefs and customs surrounding death, cremation, burial, the roles of family members, and the grieving process. Additional norms may also exist with regard to how different cultures and religions view perinatal death.

Health care providers must therefore explore the specific beliefs and wishes of parents; they must honour these differences and provide every opportunity for parents to exercise their choices. Health care providers may find it useful to consult local religious advisors for guidance. Of course, a parent may be part of a certain culture or religion and yet not adhere to all of the beliefs and customs of that particular group. The following examples illustrate various differing cultural norms. Some religions and cultures:

- require burial within 24 hours of death, while others will wait for a number of days;
- do not consider cremation as a legitimate way to dispose of a body;
- choose to have the placenta buried with the child, while others may wish to bury it separately. Some parents bury the placenta even though the child lives;
- will not permit the child to be named if the death is a result of miscarriage or stillbirth. Some faiths do not name, or have funeral rituals for, babies who have lived less than a certain number of days;
- require the mother to remain isolated from all friends and to stay at home for a specified period of time; and
- encourage loud wailing to demonstrate the parents' loss, while parents from other cultures are seemingly non-demonstrative and display little emotion in public.

Laws

Postmortems

Each province or territory is unique. It is therefore the responsibility of the health care provider to be knowledgeable about, and inform the parents of, the provincial or territorial laws regarding postmortems. In some provinces and territories, a postmortem may be required by law. In others, it is the parents' choice. In addition, some religions will not permit a postmortem.

Burial and Cremation

Provinces and territories differ when it comes to cremation, burial, and tissue disposal regulations. Health care providers need to familiarize themselves with the regulations in their province or territory. This information should be made available at the hospital unit. Professionals need to discuss the options regarding burial, cremation, and disposal of remains *regardless of the baby's gestation and weight.*

When arranging burials, cremations, or other memorial ceremonies, health care professionals should consider the following factors:

- Funeral services and burials are an individual choice, based on preference, tradition, culture, and religion.
- Parents may choose to have the baby share the family burial area.
- Individual and family preferences, as well as cultural beliefs and customs, may differ from the norms prescribed by institutional guidelines.

Funeral homes are showing signs of increased understanding — not only of infant deaths but of the resulting needs of parents, siblings, and extended family and friends. In addition, they are becoming more sensitive to the needs for services for babies weighing less than 500 grams and who are less than 20 weeks' gestation. It might be helpful to include funeral directors when discussing or planning programs, or educating staff.

Transportation

Some parents may wish to have a funeral home transport their baby from hospital to funeral home. Others will insist that the child leaves the hospital with the mother. Some parents may wish to place the infant in the coffin before the baby leaves the hospital. A small white box, or a similar container, will be required to transport the child to the funeral home of choice. Some hospitals provide these boxes, appropriately decorated; in other instances, the parents may have to provide them. The funeral home must be contacted prior to the transport.

Some parents who live a great distance from the hospital have requested that they, or a close relative, transport the deceased baby in a family car to the local funeral home. In this instance, a hospital policy and written consent form are required, transferring responsibility to the parents. Lawyers may need to be consulted to facilitate this process. The health care institution should provide the parents with burial and transportation guidelines.

Returning to Work

The laws concerning return to work after a perinatal loss vary by province or territory. In most provinces and territories, the normal number of weeks of employment insurance awarded for postpartum leave is not provided for parents experiencing a loss. As well, the leave available to women who have suffered a perinatal loss varies by individual employer, union standards, and company policies.

Employers must be sensitive to each woman's individual need for enough time to physically and emotionally begin the grieving process. Sufficient time is also required for the pregnancy hormonal levels to return to normal. For most women, the usual three-day bereavement leave is inadequate to absorb the impact of such a loss. The father may also need to be with the mother, to initiate his own grief process. Health care providers may need to provide medical certification so that the woman does not have to return to work too early. On the other hand, some women may choose to return to work earlier than others; these women should be supported in their decision.

Program staff should educate the community about the needs of parents who have experienced a perinatal loss. Depending on the individual situation, parents who experience a perinatal loss may require anywhere from six to eight weeks of bereavement leave.

Educating and Supporting Staff

Ideally, all health care providers will have received an academic grounding and clinical experience in how to support individuals through the grieving process. All training programs should cover basic information on the grieving process and the role of the health care provider in supporting individuals and families.

All staff working on neonatal intensive care units, maternal and newborn units, and pediatric units as well as in emergency rooms and recovery rooms need specific instructions on ways of supporting and assisting parents who are grieving a perinatal loss. Discussions on these matters should be incorporated into their orientation and continue, at regular intervals, during the course of employment. As well, in-service modules should be developed to deal with professional care issues concerning grieving and the health care provider's role.

Orientation and in-service education programs should focus on the following issues:

- the principles of family-centred care and working with families;
- the positive components of working with death and dying;
- the different types of perinatal loss and the potential support roles for health care providers;
- the parents' and sibling's experiences of perinatal loss;
- the parents' feedback on support provided during the grieving period;
- various practical strategies for helping parents; and
- the diverse community resources available to parents, including parent support groups.

Health care institutions and agencies should be encouraged to provide forums at regular intervals that allow for staff discussion of issues regarding the care of mothers and parents who have undergone a perinatal loss. Rounds, workshops, and discussion groups are among the possible venues.

Health care providers who support parents through the grieving process will often require support themselves. Ways of providing such support include:

- Create opportunities for health care providers to get together as a group to discuss individual situations, as well as their own feelings and needs.
- Offer staff members suggestions as to what to say in situations of loss.
- Provide a quiet room for staff use.
- Put on extra staff when a death occurs — often, two nurses are needed.
- Ensure that staff members have sufficient time to spend with the families.
- Identify the rooms of families who have suffered a loss, so that all staff members know that a family is grieving before they enter the room. For example, place a butterfly over the doors of these rooms.
- Pair experienced staff with new staff members so they can give guidance.
- Provide staff members with opportunities to communicate with and support each other, through support groups.
- Offer staff members Employee Assistance Programs (EAP).

Above all, it is critical that all health care professionals respect each other's feelings.

Facilitating and Supporting Grieving in the Community

When a family experiences a perinatal loss, its members need access to supports and referrals in the community. Because the loss usually occurs in a hospital, the woman or couple may well return home without the necessary support. It is up to the hospital and community health care providers to ensure that families receive follow-up and appropriate support services — all with informed consent. Depending on the size and nature of the community, support resources may include parents or grandparents, close friends, a self-help group, and/or professionals.

Collaboration between hospitals and community health agencies is needed to determine what resources are available in the community and how to make the appropriate referrals. Community support of parents experiencing perinatal loss is best given by a team. Team members might include family members, nurses, social workers, friends, physicians, clergy, funeral directors, bereavement counsellors, and parents who have experienced a perinatal loss. The family physician or midwife and community health nurses are particularly significant members of this follow-up team.

Follow-up care includes assessing the status of the grieving process, offering continued support, validating the cause of death when autopsy reports are made available, and exploring residual doubts and questions. This follow-up needs to be organized and coordinated if it is to succeed. Family needs dictate the follow-up frequency and schedule.

Families that have experienced a perinatal loss will require information regarding bereavement support groups. (See next section, Parent Support Groups). If such a group does not exist, hospitals and/or community-based agencies should consider organizing one. Parents who have had similar experiences can be valuable allies and facilitators in this process.

Some parents may benefit from reading material or educational videos on bereavement. A library of books and videos or an information packet can be made available for loan or reference at the hospital, home, support group, or local library.

Isolated communities often present special challenges for follow-up. Although many women with complications of pregnancy come from these communities, their health care providers in large urban centres may be unaware of the resources and networks available once the family returns home. Telephone consultations and personal referrals, however, constitute a good first step, inasmuch as distance can delay transmission of written documents or referrals. It is also beneficial to create reference manuals for specific referrals and specific communities. The Internet is now providing excellent resources and links for parents and health care providers living in isolated communities.

Centres can provide annual group memorial services and/or a group burial area to commemorate infant deaths. Parents and health care providers participate in these services, which can be held at the perinatal/pediatric centres, a local cemetery, or elsewhere.

Creating a supportive community for perinatal grieving can also be achieved by increasing public awareness of the perinatal loss experience. Health care providers and parents need to work together to tell the parents' stories.

Parent Support Groups

Families in crisis can turn to community-based support programs for help. There, families experiencing the same issues are encouraged to share their stories and to find strength — within each other and themselves. These programs provide services that effectively complement the health care system. For a bereaved person, these "self-help/mutual aid" programs can be a sanctuary, a source of support and comfort through the intensity of their grief journey.

As the name implies, *self-help* support programs are useful for individuals and families *who have the potential to help themselves*. A self-help program provides an accepting environment for bereaved individuals to tell their story. There they can remember and talk about the person who has died; they can be supported through the normal process of grieving; and they can express the normal range of emotions and response — the anger, confusion, shock, self-blame, depression, and guilt — that accompany grief. Friends and family may consider these feelings unacceptable, uncomfortable, perhaps even unhealthy; within the self-help bereavement community, however, the expression of these feelings is accepted.

Mutual aid is a logical, natural by-product of self-help. In seeking support for themselves, bereaved parents assist other members of their group. The mutual trust within a self-help group allows members to assess their own experience — not only accepting the reality of the loss, but also "normalizing" the roller coaster of feelings associated with their loss. Loss of self-esteem, self-doubt, feelings of guilt and self-reproach — all are frequent complaints of bereaved parents. In consoling other parents, the bereaved learn to value their own strengths and the knowledge gained from their experience. Thus, they begin to restore their own sense of self-worth.

As the focus of the bereaved parents becomes less internal, they increasingly look toward the outside world. The true purpose and success of such "grief work" is to help the bereaved to return eventually to the mainstream of life, to function again in the "outside" world.

Supporting Grieving Families Through Selp-Help and Mutual Aid

A community bereavement group can provide grieving families with the requisite safe place and grieving time. Within the self-help/mutual aid setting, group members devote time and energy to sharing their stories and remembering their child. Parents whose baby has died can "check out" the reality of their loss. Sometimes, it may even seem that their baby never existed. In a self-help group, they can identify and validate the source of their pain, thereby allowing the grief to become "real." Initially, this process may seem to intensify the grief. Yet, the seeming paradox of grief is that in sharing their story, and their child, with an accepting and supportive group, parents begin to assimilate their experience and eventually "move on."

After the death of a loved one, families may feel pressure to resume their usual schedule, to lead a "normal" life, and, in general, to behave as if they had not suffered a traumatic loss. Often, employment demands lose sight of the bereaved, who may feel unable to return to a job, let alone function at their customary performance level. Well-intentioned family and friends may be unaware and uninitiated in the demands of grief, and offer misguided advice to survivors. In addition, day-to-day demands may leave parents with little time (or the inclination) to tend to their own needs and grief journey. Sharing individual strategies for coping with the challenges of day-to-day life is part of the agenda of a support group meeting.

These groups are facilitated by parent volunteers. Bereaved parents often have clear insights as to what helps and hinders the healing process of grief. Many, moreover, are able and willing to assist others struggling with this process. In self-help/mutual aid programs, volunteers can comfort and support the bereaved through the normal grieving process. Their experiential knowledge of loss gives credibility to their role within the group.

Self-help/mutual aid does not work for all families. Professional help may be necessary. In the end, the solution may be individual counselling, or professionally run therapy groups staffed by professionals with expertise in bereavement work.

Caregiving Professionals vis-à-vis Self-Help and Mutual Aid Models

Health care providers — therapists, spiritual advisors, nurses, physicians, midwives, social workers, psychologists, and others — can play a vital role in supporting and sustaining self-help/mutual aid services within the community. Caregiving professionals can be involved in many ways:

- After a loss, health care providers can encourage bereaved families to seek the support of people who can assist them in their grief journey.
- Health care providers can also act in an advisory and support capacity to parent volunteers.
- A skilled and knowledgeable health care provider can assist volunteers in defining the limitations of the support provided by a self-help/mutual aid program.
- Health care providers who volunteer within community support organizations can assist bereaved parent volunteers in identifying the newly bereaved who are in need of professional assistance, or perhaps even crisis intervention.

Strategies for Self-Help and Mutual Aid

A variety of strategies can be used to provide support for the bereaved within a community. Factors such as population and proximity to larger centres, as well as cultural considerations, may influence the strategies deployed in a particular community.

One example of a self-help/mutual aid organization that offers bereavement support, and has affiliates throughout the province, is Bereaved Families of Ontario. Its affiliates' programs and strategies are tailored to meet the needs of the specific communities they serve. For example, in major urban areas, the large number of parents seeking support has meant the development of specialized services, such as an infant-loss program. In smaller communities, the lower demand for support services may mean a less specialized type of support.

Bereaved parent groups use the following strategies to develop support programs:

- **Open meetings:** Open meetings occur at regular intervals, with members attending on a regular or sporadic basis. Some open meetings focus on special themes, with guest speakers who have expertise and sensitivity in issues related to grief and loss. Volunteer facilitators with training in group dynamics may assist with the group discussion.

- **Closed support groups:** "Closed" groups have a limited membership and a fixed number of meeting dates. The same members participate in group sessions for the duration of the group. Members of a closed group proceed together, from one meeting to the next, gaining familiarity and trust. Topics for discussion may initially follow an agenda. For example, the first meeting is often devoted to "storytelling," where each member has the opportunity to share his or her experience of loss with fellow group members. In time, group members will shape the agenda for discussion, as their own interests and needs dictate.

  Whether a group is open or closed, *confidentiality is critical to enhancing a trusting relationship among group members*. A group provides a safe place, where the bereaved can be heard, accepted, and supported through the intensity of their grief.

- **One-to-one "buddy" support:** Once parents are matched with others who have experienced a similar loss, their one-on-one interaction becomes an effective way of providing comfort to families, especially those who are newly bereaved. There are many potential criteria for pairing parents. The actual support can be done face-to-face, by phone or computer link, or by mail.

- **Media and Print Resources:** In recent years, the growth of materials specific to the needs of bereaved people, in both the print and electronic media, has been tremendous. These materials can be valuable resources for any support program. But they are especially helpful when families have little opportunity, or inclination, to interact directly with other bereaved people. The most useful materials engage the readers via the stories of families who have experienced loss. The voice is personal; it assists the bereaved by "normalizing" the grief experience, and helping them to give shape and "language" to their own experiences with loss. (See Appendix 6.)

The growing interest in computers, particularly the Internet, has opened a whole new world of bereavement support that is both widely accessible and economical to use. Many bereaved people actually find it easier to seek support through computer resources, given the measure of privacy and anonymity offered. (See Appendix 6.)

In recent years, several larger, well-known publishing houses have included books on grief and loss issues in their published titles. Many of these are available through mainstream bookstores and public library systems. As well, some speciality booksellers have extensive collections and bibliographies devoted to family issues, including bereavement and grief support. These resources, and others, are outlined in Appendix 6.

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APPENDIX 1

Checklist for the Care of Women Experiencing an Early Pregnancy Loss

This form is to be used for *all* women who experience a pregnancy loss prior to 22 weeks' gestation.

A. INFORMATION

Check ✓ those sources of support requested by the women, or identified by the nurse, as being of possible use.

☐ *Why Me?* brochure (routine)
☐ *Miscarriage Support Booklet* (Bereaved Families of Ontario Booklet) (routine)
☐ Chaplain (Name): ....
☐ Social worker (Name): ....
☐ Blessing

B. TREATMENT OF FETUS

Fetus identifiable (may or may not be intact) — Determined by: .... (initials)

Viewing requested ☐ Yes ☐ No
Viewing completed ☐ Yes ☐ No

- Burial information — Provided by: .... (initials)
- Burial at hospital cemetery ☐ Yes If yes, form completed ☐ Yes

or

- Burial by parents/funeral director ☐ Yes If yes, form completed ☐ Yes
  Letter from physician regarding gestational age completed ☐ Yes
  Record and Notification of Death/Morgue Admission and Discharge form addressographed and marked "Fetus of" ☐ Yes
- Pathology
  Detailed pathological exam requested ☐ Yes ☐ No
  If no, Regular Surgical Pathology Requisition completed ☐ Yes
  If yes, consent form completed ☐ Yes
  Pathological Requisition, including gestation data completed ☐ Yes
  Fetus in formalin sent to Pathology (in same or separate container as placenta) ☐ Yes — Sent by: .... (initials)

Fetus unidentifiable — Determined by: .... (initials)

- Pathology
  Fetus in formalin sent to Pathology (in same or separate container as placenta) ☐ Yes — Sent by: .... (initials)
  Accompanied by: regular surgical pathology requisition ☐ Yes
  If family wishes to bury "unidentifiable fetus," follow protocol under "Fetus identifiable" and under "Burial by parents/funeral director."

C. GRIEVING PROCESS

Discussion of grieving process initiated by: .... (initials)
Physician Follow-Up — Name: ....
Comments: ....
....
....

Adapted from: St. Joseph's Health Centre, London, Ontario.

APPENDIX 2

Interdepartmental Perinatal Loss Flowsheet

Use this Perinatal Loss Flowsheet to facilitate communication, avoid duplication and provide guidelines for all staff. Initiate steps outlined in Perinatal Loss Flowsheet as soon as pending/actual loss is identified.

Signature .... **Initials** ....
Signature .... **Initials** ....
Signature .... **Initials** ....
Signature .... **Initials** ....
Signature .... **Initials** ....
Signature .... **Initials** ....

ACTIONS

---

1. Notify Social Work Department

Name of Worker: ....

Interpreter needed: ☐ Yes ☐ No

Name: .... Phone Number: ....

Action taken? **Yes** **No** **Date** .... **Initials** ....

Patient wishes to see ☐ Patient does not wish to see ☐

Comments: ....

....

....

---

2. Notify Pastoral Care Department

Name of Chaplain: ....

Action taken? **Yes** **No** **Date** .... **Initials** ....

Patient wishes to see ☐ Patient does not wish to see ☐

Comments: ....

....

....

---

3. Birth Unit notifies Admitting Unit by phone when stillbirth occurs.

Primary nurse, social worker, or chaplain will provide family with Perinatal Loss Package. Social worker or chaplain will add information based on individual need.

Action taken? **Yes** **No** **Date** .... **Initials** ....

4. Explore naming the baby.

Ask: "Have you thought of a name for your baby?"

Action taken? **Yes** **No** **Date** .... **Initials** ....

Name: ....

---

5. Explain butterfly and place on door/isolette.

Action taken? **Yes** **No** **Date** .... **Initials** ....

---

6. Identify whether parents would like to:

a) see baby ☐ Yes ☐ No ☐ Undecided

b) hold baby ☐ Yes ☐ No ☐ Undecided

c) other (dress, bathe, etc.) ☐ Yes ☐ No ☐ Undecided

Specify: ....

....

Action taken? **Yes** **No** **Date** .... **Initials** ....

---

7. Explore family's cultural/religious beliefs.

a) Blessing (for stillbirth) ☐ Yes ☐ No Date ....

Denomination: ....

By: ....

b) Baptism (done for live birth celebration) ☐ Yes ☐ No Date ....

By: ....

c) Memorial service — other ☐ Yes ☐ No Date ....

Identify: ....

By: ....

Family's clergy notified ☐ Yes ☐ No

Name: ....

d) Other options: ....

....

Comments: ....

....

Action taken? **Yes** **No** **Date** .... **Initials** ....

---

8. Provide a picture of the baby.

Say: "We will take a Polaroid picture of your baby. Many parents like such a picture for a keepsake." (If parents are undecided, attach the picture to the mother's chart, in a small brown envelope.) The social worker/chaplain can encourage the family to take the picture home and keep it in a safe place. If a bonnet is used, place it in a plastic bag and send it with the mother's chart. Washing of bonnet will be done as requested. A photocopy of the Polaroid picture ensures it will last. Encourage families to bring in their own cameras.

☐ Yes ☐ No ☐ Undecided

Picture: ☐ Given to mother
☐ On mother's chart
☐ Sent to social work department on discharge

Action taken? Yes No Date .... Initials ....

---

9. Provide information on autopsy.

Say: "Everyone wonders why a baby dies. Sometimes an autopsy will help us find some answers. Would you agree to an autopsy?" Note that a preliminary autopsy report takes four to six weeks or longer while a final autopsy takes three months or longer.

☐ Yes ☐ No ☐ Undecided

Ask, "Will other close relatives/friends wish to see the baby?"

All viewing completed: ☐ Yes ☐ No

Remember that until all viewing is completed, the *autopsy consent form* remains with the other death documentation forms in the Death Documentation Envelope on the chart. Once these forms are sent to the Admitting Unit, viewing of infant is no longer recommended.

Autopsy consent form sent to Admitting Unit with other completed forms:

☐ Yes ☐ No

The autopsy must be completed within 12 to 24 hours after birth.

Action taken? Yes No Date .... Initials ....

---

10. Provide accommodation

Mother will be accommodated in a private room on the mother/baby unit. A sleep chair is provided for the support person. Although they will see and hear babies, they will receive support from staff. If no private room is available, the mother should stay in a semiprivate room, with the other bed used by the support person.

Room # ....

Support Person staying: ☐ Yes ☐ No

---

11. Provide family with remembrances.

Check off ☑ those given.

☐ Bonnet
☐ Lock of hair
☐ Photo
☐ Crib card
☐ ID band
☐ Addressograph
☐ Butterfly
☐ Clothing
☐ Other: ....

Action taken? Yes No Date .... Initials ....

APPENDIX 3

Step Checklist

1. Infant taken to morgue, in container provided by morgue (kept in birth area).
2. Forms sent with infant to morgue.
3. Autopsy initiated, after all remaining forms in Death Documentation Envelope have been received by Admitting Unit.
4. On receipt of all forms, the admitting department:
   i) contacts the morgue
   ii) releases the body to the funeral director, once the morgue has confirmed that all procedures are completed and the social worker or chaplain has confirmed the name of the funeral home chosen by parent(s).
5. Funeral decisions made. Parents are responsible for the burial of all babies greater or equal to 22 weeks' gestation. It is not necessary to make any immediate decisions. Members of the following disciplines can discuss burial: pastoral care or social work (or nursing if pastoral care or social work staff are unavailable). Parents should be asked: "Have you thought about burial/funeral arrangements?" It should be suggested that they or a family member contact the funeral director of their choice. The service can be delayed until the mother can be present.
   a) Other sources of support discussed, and notification ensured or information made available prior to discharge.
   b) Pamphlets on parent groups for bereaved families made available in Perinatal Loss Package.
   c) Referral made to public health.

   Only the social worker or chaplain should notify the Admitting Unit when all viewing is completed, and the name of a funeral home has been chosen by parent(s).

   Admitting notified by: .... Date ....

   Funeral home being used: ....

   Family physician ☐ Name: ....

   Referral form completed: ☐ Yes ☐ No
6. All necessary documentation completed (as per policy/procedure manual). Once viewing is completed, the primary nurse ensures that all completed forms are placed in the Infant Death Documentation Envelope. Envelope is sent to Admitting Unit by a porter (do not place in mail system).
7. Classification of event (miscarriage, abortion, stillbirth, neonatal death) made by obstetrician or attending family physician at the time of the event.

   Date Sent: .... Initials: ....

Adapted from: St. Joseph's Health Centre, London, Ontario.

APPENDIX 4

NICU Bereavement Checklist

Baby's name: ....

Mother's name .... Father's name ....

Date of birth: .... Hospital no.: ....

Address: ....

Siblings + Ages: ....

....

....

Current Loss:

☐ Stillbirth ☐ Live birth

Sex: male ☐ female ☐ Weight .... Gestation ....

Previous loss:

☐ Miscarriage ☐ Live birth ☐ Stillbirth ☐ Infertility

INDICATE COMPLETION	DATE	TIME	SIGNATURE
Mother and father saw baby when born and/or after birth: ☐ M ☐ F Mother and father held baby after birth: ☐ M ☐ F	....	....	....
Mother given option of being transferred out of maternity department: ☐ Antepartum ☐ Postpartum ☐ Gynecology	....	....	....
Pastoral care offered: ☐ Y ☐ N If yes, seen by:	....	....	....
Baby baptized: ☐ Y ☐ N By: .... Date: .... Time:	....	....	....
Social worker involved:	....	....	....
A picture given to parents: ☐ Y ☐ N Kept on file: ☐ Y ☐ N	....	....	....
Keepsake memories given to parents: ☐ Y ☐ N "When Hello Means Goodby"/"Beginnings" given to parents: ☐ Y ☐ N	....	....	....
Did parents name baby? ☐ Y ☐ N Given Name:	....	....	....
Burial options explained: ☐ Y ☐ N ☐ Hospital ☐ Private Burial permit (from Admitting) requested, if taking body home	....	....	....
Autopsy desired: ☐ Y ☐ N Consent obtained: ☐ Y ☐ N	....	....	....
Community resources offered: ☐ Y ☐ N	....	....	....

APPENDIX 5

Follow-up Communication

Follow-up person: ....

☐ **Initial contact** **Date:** ....

Comments: ....

....

....

....

☐ **Three months** **Date:** ....

Comments: ....

....

....

....

☐ **Six months** **Date:** ....

Comments: ....

....

....

....

☐ **One year** **Date:** ....

Comments: ....

....

....

....

Additional comments: ....

....

....

....

....

....

....

....

Adapted from: Women's College Hospital.

APPENDIX 6

Further Reading

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Parents and Health Workers

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"A Child's Grief," 1994, 54 minutes (video)
Available through Magic Lantern Communications Ltd.
#38-775 Pacific Road, Oakville, Ontario L6L 6M4
Tel.: (905) 827-1155, 1-800-263-1717 Fax: (905) 827-1154
e-mail: video@magiclantern.ca

ORGANIZATIONS

There are a number of bereavement groups in Canada and the United States. Many of these are community based. Parents should be helped to find the group in their community. The following is a list of some national and provincial organizations.

Bereaved Families of Ontario provides professionals and families with educational workshops for support and training purposes. It also provides self-help, mutual aid, and resources through its affiliates.

562 Eglinton Avenue East, Suite 401, Toronto, Ontario M4P 1P1
Tel.: (416) 440-0290
Fax: (416) 440-0304
e-mail: bfo@inforamp.net
http://www.inforamp.net/~bfo/

Canadian Foundation for the Study of Infant Deaths (The) *"SIDS Foundation"*
586 Eglinton Avenue East, Suite 308, Toronto, Ontario M4P 1P2
Tel.: (416) 488-3260 (toll-free number: 1-800-END-SIDS)
Fax: (416) 488-3864
e-mail: sidscanada@inforamp.net

Compassionate Friends of Canada (The)
Pat Pinch, National Office Secretary
685 William Avenue, Winnipeg, Manitoba R3E 0Z2
Tel.: (204) 787-4896
Fax: (204) 475-6693
e-mail: TCFLAC@aol.com

Pen-Parents of Canada

This organization publishes a small magazine dedicated to providing support to families which have experienced pregnancy and infant loss. A substantial portion of the publication consists of articles and poems submitted by its readers. *Pen-Parents* is available at a nominal cost through subscription order.

Pen-Parents of Canada
P.O. Box 32348, RPO Coquitlam Centre, Coquitlam, British Columbia V3B 7Y4

Subsequent Pregnancy After Loss (SPALS)

An on-line discussion group at http://www.inforamp.net/~bfo/spals/

Pen-Parents, Inc.
P.O. Box 8738, Reno, Nevada 89507-8738
Tel.: (702) 826-7332
http://pages.prodigy.com/NV/fgck08a/PenParents.html

Centering Corporation

A small publishing business, the Centering Corporation provides families with printed resources (books, articles, and pamphlets) concerning grief and loss. Its materials are reasonably priced, easy to read, and available through mail order.

Centering Corporation
1531 N. Saddle Creek Road, Omaha, Nebraska 68104
Tel.: (402) 553-1200

APPENDIX 7

Glossary of Terms

Low birth weight. A fetus/baby is considered of low birth weight if he/she weighs less than 2500 grams at birth. The low birth weight rate is calculated as the number of live born infants weighing less than 2500 grams divided by the total number of live born infants. A fetus/baby is considered of very low birth weight if he/she weighs less than 1500 grams at birth.

Prematurity. A fetus/baby is considered premature/preterm if he/she is born before the 37th week of gestation. A fetus/baby is considered to be very preterm if he/she is born before the 32nd week of gestation.

Stillbirth. A fetus/baby is considered to be stillborn if he/she is born following at least 20 weeks of gestation or weighs at least 500 grams, and shows no sign of life at the time of birth.

Early neonatal death. A live born infant who dies before the seventh day following birth is classified as an "early neonatal death."

Late neonatal death. A live born infant who dies on or after the seventh day following birth, but before the twenty-eighth day following birth is classified as a "late neonatal death."

— CHAPTER 9 —

Transport

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Introduction[1]

The transport of pregnant women and newborns who are at high risk for problems is recognized as an essential component of modern maternal and newborn care. Indeed, the newborn's outcome improves if women are transported antenatally to a referral centre that can provide the required obstetrical care for her and after-birth support for her infant. Maternal transport with the baby in utero is therefore preferable to neonatal transport, and should be the primary goal.

The provision of family-centred care is particularly challenging when a woman and/or her baby are removed from either the original or the anticipated environment. On the one hand, the woman and her family understand that they will be cared for in a place with the resources to provide optimum care. On the other hand, it is an anxiety-provoking experience for a woman to be transferred from her community hospital — where she is familiar with the surroundings and the physician/midwife who has looked after her during her pregnancy — to a centre that may be in a larger community, to be cared for by people she has never met. Added to this fear is the woman's anxiety for herself and her baby's well-being. As well, she may have other children at home who require care and reassurance and for whom arrangements must be made. Furthermore, her partner may be unable to be with her, or be unable to visit frequently due to distance or family and work commitments.

It is equally difficult for a woman if her baby is sick and must be transported away from the place of birth, perhaps even out of the community. Separation from her baby is very difficult. Naturally, she will be anxious about the baby's well-being. Again, her partner or family members may be unable to be with her or to travel with the baby. The woman may therefore lack the emotional support she needs at this extremely trying time.

All these and other factors place significant stress on the woman and her family.

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[1] These guidelines are based on the Society of Obstetricians and Gynaecologists of Canada's (SOGC) 1992 *Guidelines for Physicians and Nurses in Maternal/Fetal Transport*; the British Columbia Reproductive Care Program's 1997 document *Maternal/Fetal Transport*; the Perinatal Education Program of Eastern Ontario's 1998 document *Maternal/Fetal Transport Guidelines*; the Reproductive Care Program of Nova Scotia's 1992 document *Maternal/Fetal and Neonatal Transport*; and the American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Pediatrics' (AAP) 1997 document *Guidelines for Perinatal Care*. Readers are referred to their regional centres for specific transport information concerning their region.

The following specific principles of family-centred care are critical in these situations:

- Women and families need information about their circumstances; they need to be active participants in decision making.
- Women and families need continuous, supportive care from qualified personnel.
- Family members need to be together to whatever extent possible, and to communicate with each other and with health care personnel if separation becomes necessary.

Components of a Regional Referral and Transport Program

Although the majority of transfers are to a Level III centre, transfer to a Level II centre may be the most appropriate and allow the family to remain closer to home. Despite the most careful assessment, emergencies do occur — some not until the woman is established in labour, others after the infant is born. Provisions for neonatal transport are thus essential.

A regional referral and transport program consists of the following components:

- an assessment of problems that will benefit from consultation and/or transport;
- a continuum of care provided to family members as they move between the referring and receiving centres;
- equipment and personnel to facilitate transfer in a safe and effective manner as required;
- interagency collaboration and communication;
- facilitation of the family being able to remain together;
- frequent updates, information, and support for the family in this time of stress and grief;
- 24-hour availability of the program;
- reliable, accurate, comprehensive communication systems between referring hospitals and between the transport teams and hospitals, regarding response times, capabilities, and facilities;

- systems for the mother to return to her community when appropriate, without undue financial stress;
- registries of requests for transport and how they are handled, for purposes of quality audit;
- ongoing performance evaluations; and
- ongoing health care professional and public education initiatives.

Personnel

Transport personnel should have the collective expertise, technical skills, and clinical judgment to provide supportive care for the wide variety of emergencies that can occur during transport. Team members should be drawn from trained physicians, nurses, respiratory therapists, and emergency personnel. Composition of the transport team should be consistent with the expected level of need of the woman and/or baby being transported. It is the responsibility of all health care providers in the community to work together to ensure that the emergent needs of mothers and babies are met.

Transport of the Woman and Her Unborn Baby

Indications for Transport

The indications for maternal transport may relate to the woman or to the unborn baby. In general, transport should be considered when the resources for immediate and ongoing care of the woman and her unborn baby or infant in the local community are inadequate to manage the possible complications.

The indications for transport (following appropriate assessment by a physician) are twofold: when the mother or baby requires the advanced skills and resources of a Level II or III centre; and/or when it is expected that the infant will need care in a neonatal intensive care unit. The actual transfer will depend on the distances, the geographic and climatic conditions, and the clinical judgment of the presiding physician/midwife.

Specifically, the most frequent indications include:

- preterm labour;
- preterm rupture of membranes;
- severe pregnancy-induced hypertension or other hypertensive complications;
- antepartum hemorrhage;
- medical complications of pregnancy, such as diabetes, renal disease, hepatitis;
- multiple gestation;
- intrauterine growth restriction;
- fetal abnormalities;
- inadequate progress in labour; and
- malpresentation.

In situations where prelabour complications are expected, early consultation and/or referral to the appropriate centre for birth are recommended. Perhaps then the need for subsequent emergency maternal transport can be avoided.

Contraindications for Transport

Contraindications for transport include the following situations:

- the woman's condition is insufficiently stable for transport;
- the unborn baby's condition is unstable and threatening to deteriorate rapidly;
- the birth is imminent; and
- weather conditions are hazardous for travel or present dilemmas for transport (guidance should be sought from the regional centre in such cases).

Transport Plan

In all agencies, policies and procedures should be documented and put in place for the emergency care of the woman and her unborn baby or newborn. In the event of an emergency, prior arrangements should be made with a receiving health facility. A number of considerations go into the transport planning.

- Because this is an extremely distressing time for families, women and their families need the health care providers' full support during the transfer experience; they also need good feedback and a full sharing of all available information. The woman and her family should be active participants in all decisions relating to transport. Sufficient time for questions should be provided and the woman and her family should be encouraged to express their fears and concerns.

Discussions with the women and their families are imperative for information sharing. It is particularly important to communicate the following information with absent family members before the transfer:

- the reasons for transport;
- the scheduled date, time, and duration of the transport;
- the destination of the woman and/or baby;
- the mode of travel;
- what will happen during transport (i.e. the type of care);
- the names of staff members who will accompany the woman and family;
- the visiting hours and telephone numbers of the receiving hospital;
- the anticipated length of hospital stay;
- travel directions/maps to receiving hospital by car, or information on other modes of transportation; and
- the accommodation options for family members.

It is important to have family members available at the destination. The woman's partner or another support person should be encouraged to accompany the woman (providing there are no insurance or legal ramifications). If this is impossible, families should be helped to travel to the destination in a safe manner. If the decision is made to drive but it causes the family too much stress during this difficult period, it may be preferable to have another person drive. The partner or support person should be encouraged to make accommodation arrangements in the city of the receiving hospital.

It is important to enable the family to remain together. The woman who has been transferred will need a strong support system.

- Transport requires prior discussion between the referring physician/midwife and the accepting physician. A detailed run down is required — of the well-being of both the mother and unborn or newborn baby; the stabilization of the woman's condition; and the transport plan itself.

- The health care providers in the referring and receiving centres must make a joint decision as to the mode of transport (road or air ambulance) and the need for accompanying personnel. The decision as to who should accompany the woman depends on her condition. The accompanying professionals should be able to assess the condition of the mother and her unborn baby, to respond appropriately to any subsequent changes and to conduct emergency birth. They should be trained to monitor and maintain infant body temperature, to perform infant resuscitation as well as adult and infant cardiopulmonary resuscitation, and to administer IV therapy.
- The proposed receiving hospital should document the request for transfer on a standardized form. Required information includes the names of the woman and physician/midwife, the reason for the transfer request, the current condition of the woman and her unborn baby, any decisions regarding treatment and transport, the type of health professional accompanying the woman/newborn, and the name and temporary address of the accompanying support person. For audit purposes, this documentation should be done whether or not the decision is made to transport the woman.
- The referring institution should complete a maternal transfer form that includes photocopies of the prenatal record, the pertinent hospital records, and the ultrasound scan reports. If unavailable at the time of transport, these documents should be faxed as soon as possible. (See Appendix 1 for sample forms.)
- The woman should wear an identification bracelet.
- The health status of both woman and baby should be fully assessed. Transport is not routinely recommended for a woman whose infant's gestational age is less than 22 completed weeks unless it is for maternal issues. (Readers should refer to the 1994 CPS/SOGC position statement *Management of the Woman with Threatened Birth of an Infant of Extremely Low Gestational Age* for guidelines concerning the care and support of women whose infants have a gestational age of less than 22 weeks, or 22 to 26 weeks.)
- Assistance should be provided for those interventions necessary for stabilization prior to transport (e.g. for the establishment of an intravenous infusion or the initiation of drug therapy).

The availability and functioning of all transport equipment should be checked before departure (see Appendix 2). Sufficient oxygen should be made available, allowing for a 50 percent margin of safety. For air transport, consideration should be given to administering oxygen during high-altitude flights.

Care During Transport

Care during transport should be individualized, depending on the nature of the problem and the distance and conditions of the transport. During transport, all assessments should be documented on the maternal transfer form. The following aspects of the woman's and family's care are very important:

- The woman requires continuous supportive care; her family needs continuing support as well. The woman will need information about her own and her baby's well-being. She will also need to have her questions answered.
- It is important for the woman to lie on her side. The position lessens the risk of supine hypotension and fetal hypoxia.
- Both the woman and unborn baby need to be monitored during transit. The frequency of monitoring will depend on their condition and the judgment of the attendant, but should include monitoring of:
  - uterine activity;
  - maternal blood pressure (using a digital readout sphygmomanometer or palpation of the brachial artery); and
  - fetal heart rate (noise levels will require the use of a battery-operated, ultrasonic Doppler fetal-heart detector).
- The woman may require supplemental inspired oxygen, particularly during transport by air.

The care of the mother and infant during transport is the responsibility of the referring institution, unless the receiving institution has sent a transport team.

Care on Arrival

When a woman and/or her family arrive at the receiving centre, a number of important components of care will need consideration.

- A unfamiliar centre with new, unknown care providers can be a difficult experience for the woman and her family. It is critical that the health care providers appreciate this and provide the necessary support. For example, it is essential to introduce the woman and her family to the receiving staff. If family members have not been able to accompany or follow the woman, they need to be called as soon as possible; they should be notified of the woman's arrival and the status of both mother and unborn baby.
- On arrival, a full assessment of the woman and baby should be done. Their clinical status should be discussed with the receiving staff. Accompanying transport personnel should participate in the care necessary to admit the woman to the unit.
- It is crucial that the referring physician/midwife, and the woman's usual physician/midwife (if different), be informed of the events in hospital, the outcome, and the postdischarge plans for both mother and baby (if she or he has been born).

Suggested Management Plans

In its 1992 *Guidelines for Physicians and Nurses in Maternal/Fetal Transport*, the SOGC suggests care protocols for three common conditions for which transport may be required: preterm labour, vaginal bleeding, and hypertension. Protocols for specific conditions are also outlined in the various regional/provincial guidelines. As well, the Canadian Paediatric Society (CPS) and the SOGC have developed guidelines for the care and support of women expecting an infant of extremely low gestational age (CPS and SOGC, 1994).

Neonatal Transport

For newborn transport, it is preferable that the transport team originate at the receiving centre. Staff members can then travel to the referring hospital and assume responsibility for the baby, including the necessary stabilization and actual care provided during the transport to the receiving centre.

During neonatal transport, adequate equipment must be available. The referring centre should request assistance/consultation as soon as it can, so that the transport team can prepare in advance.

Whether the transport distance is short or long, certain fundamental principles of neonatal transport apply. These fundamental principles include provision of warmth, stabilization by personnel with appropriate training and experience, and transport under controlled conditions.

Before transport, hospital personnel in the referring hospital should work with members of an external neonatal transport team in stabilization and care. Responsibility for the transport team should be clearly established — usually a physician in the receiving hospital is responsible after the team leaves the referring hospital. With or without a specialized transport team, however, responsibility for care should be clear at all times. Appropriate communication with the responsible physician should occur prior to departure for the hospital of destination. In addition, mechanisms should be available for communication related to unexpected problems that may occur en route.

Reasons for Transport

Neonatal transfer should take place (following appropriate assessment by a physician) in two instances: when the baby requires the advanced skills and resources of a Level II or III centre; and/or when it is expected that infant care in a neonatal intensive care unit will be required. The actual transfer, though, will depend on the distances and geographic and climatic conditions involved, as well as the clinical judgment of the presiding physician/midwife.

In effect, there are countless reasons for transport, specific to the baby and region. Some of the more common reasons for transport are:

- persistent respiratory distress;
- congenital malformations requiring special diagnostic procedures, treatments, or surgical care;
- sequelae of hypoxic ischemic events with persistent evidence of multisystem organ dysfunction;
- preterm birth/low birth weight; and
- severe infection.

Transport Plan

The decision to transfer an infant, based as it is on consultation between the referring and receiving physicians, requires a physician's order. As noted, all infants should be stabilized prior to transport. In most instances, it is ideal for the infant to remain at the referring centre. The receiving hospital's transport team or neonatal staff can then go to the centre, stabilize the infant there, and conduct the transport. A good deal of information must be collected prior to transport:

- Basic data for the tertiary centre (or transport team) need to include:
  - name of referring physician
  - name of referring hospital
  - name of infant
  - name of parents
  - date and time of birth
  - weight and gestational age
  - presenting/referral condition (See sample form in Appendix 1.)
- A summary of maternal and neonatal data needs to include:
  - *Maternal information*
    maternal medical history
    obstetric history
    complications of pregnancy
    history of labour and birth
  - *Neonatal information*
    Apgar score at 1, 5, and 10 minutes
    resuscitation efforts
    current infant problems
    present assessment of infant
    necessity for IV lines
    laboratory data, if available
    medications given
- Copies of reports need to include:
  - all pertinent laboratory data
  - maternal and cord blood specimens
  - x-rays
  - photocopy of mother's and infant's charts, including antenatal record;
  - copies of fetal monitoring tracings

- Before transport, all necessary equipment should be checked for functioning. As well, the infant's identification band should be checked for accuracy and consistency with that of the mother. During actual transport, the infant must be kept in a warm transport isolette and monitored frequently (frequency to depend on the infant's condition and the attendant's judgment).
- During the period leading up to transport, it is critical that there be ongoing support of and communication with the mother and family. All information regarding reasons for transfer should be discussed and the parents involved in the decision-making process. Parents need full information about the tertiary centre. They also need information regarding travel to the centre and accommodation at or near the centre. Before transport, it is essential that parents have time with their baby. Every effort should be made to enable them to see and touch or hold their infant. As well, the parents should be given a photograph of the infant before transport.
- Arrangements should be made for the mother to be transferred to the hospital where the baby will be admitted. In all cases, parents should be informed and encouraged to contact the referral hospital concerning their infant's condition. Communication with the referral hospital should be ongoing so that information regarding the infant's health can be communicated to the parents, as well as to the staff who have cared for the infant.

Return Transport

In return transport, a mother and/or her baby, after receiving intensive or specialized care at a referral centre which has resulted in resolution of the original problem, return to the original or local centre for ongoing care. Return transport is indicated when:

- the pregnant mother's condition has stabilized such that her treatment plan can be safely implemented at the referring (home) centre;
- the postpartum mother can safely return to her home community (but *only* if it is appropriate to return without her baby); and
- the infant may return to the referring community with a follow-up or treatment plan.

In Conclusion

Communication of events and/or plans is vital from centre to centre. Such communication should specify the treatments required, the equipment needed, the outcomes expected, any parent/infant special needs, specific follow-up plans, and the clinicians required.

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APPENDIX 1

Maternal Consultation — Transfer Record

Date .... Time ....

Health insurance # ....

Mother's name .... Birth date: .... DAY/MONTH/YEAR

Mother's address .... POSTAL CODE

Mother's telephone – Res .... Bus ....

Next of kin .... Relationship ....

Contact Names and Numbers

Family physician ....

Res .... Bus .... Fax ....

Attending physician ....

Res .... Bus .... Fax ....

Referring hospital ....

Tel .... Fax ....

Communication is important. Please include telephone numbers.

Reason for transfer

Age .... Term Pregnancies .... Premature .... Abortion .... Living Children ....

LMP .... EDC .... Weeks' Gestation ....

Ultrasound scans (or send copies):

Date .... Findings ....

....

Membranes: ☐ Intact ☐ Ruptures ....

Nitrazine: ☐ Positive ☐ Negative ....

Onset of labour .... Frequency .... Dilatation ....

☐ Bleeding .... ☐ Proteinuria ☐ Edema

☐ Urinary infection .... Fetal heart rate ....

Temperature .... Pulse .... BP ....

Blood type .... Rh .... Rubella titre .... VDRL ....

Obstetric history (complete or send a completed, legible prenatal sheet)

....

....

....

....

....

....

Medical history (allergies, infection, diabetes, anemia, hypertension)

....

....

....

....

Medications

....

....

....

....

Include ultrasound reports, x-rays, laboratory data, fetal monitor strip (if indicated).

....

....

If ultrasound or other reports are not available at the time of transport, please fax these as soon as possible.

Observations in Transit

Departure time .... Family accompanying ....

Relationship ....

TIME	FETAL HEART RATE	BP	PULSE	RESPIRATIONS	CONTRACTIONS	COMMENTS
....	....	....	....	....	....	....
....	....	....	....	....	....	....
....	....	....	....	....	....	....
....	....	....	....	....	....	....
....	....	....	....	....	....	....

Arrival time ....

Vital Signs on Arrival

Temperature .... Pulse .... Respirations ....

BP .... Reflexes .... Fetal heart rate ....

Labour status ....

....

Clinical condition ....

....

....

....

Mode of transfer ....

Signature .... Date ....
(ATTENDANT DURING TRANSFER)

COMMUNICATION IS IMPORTANT

Referring physician and family would appreciate a telephone call from receiving physician.

Adapted from: Society of Obstetricians and Gynaecologists of Canada, *Guidelines for Physicians and Nurses in Maternal/Fetal Transport*, Ottawa, 1992.

Neonatal Pre-Transport Information Sheet

(The following outlines the typical information you should be prepared to provide over the telephone to the receiving hospital.)

Date and time of call .... Referring hospital ....

Referring physician's name ....

Neonate's Information

Name: ....

Diagnosis/Reason for referral ....

BIRTH DATE	TIME	SEX	BIRTH WEIGHT	WEEKS' GESTATION	APGAR 1 MINUTE	APGAR 5 MINUTE
....	....	....	....	....	....	....

Resuscitation

Respirations:	*Compressions:*	*Medications:*
Spontaneous: ☐ Yes ☐ No	☐ Yes ☐ No	IV ....
Ventilated with bag: ☐ Yes ☐ No	Time initiated:	....
O_2: ☐ Yes % .... ☐ No	....	....
Intubated:	Time stopped:	....
Time .... ETT size	....	....
Suction mec below cords: ☐ Yes ☐ No		

Congenital anomalies ....

Postnatal course ....

....

Lab results ....

X-rays .... Cord/blood gases ....

Maternal Data

Name: .... LMP/EDC ....

Age: .... G .... T .... P .... A .... L ....

Blood group .... Rh .... VDRL .... Rubella .... HBsAG ....

TB .... HIV .... Group B Strep: ☐ Pos ☐ Neg Date ....

Past OBS History ....

Present Labour and Birth

Fetal monitoring: ☐ Yes ☐ No Internal ☐ External ☐ Auscultation ☐ Scalp pH ☐

Length of labour: 1st stage .... 2nd stage ....

AROM ☐ SROM ☐ Date .... Time .... Colour .... Amount ....

Medications ....

Anesthesia ....

Type of birth: ☐ Vaginal ☐ Cesarean Presentation ....

Complications ....

Date .... Signature and title ....

Source: In *Perinatal Practice Guidelines* (PEPEO 1997), adapted from Children's Hospital of Eastern Ontario NICU Transport Log and Neonatal Pre-transfer Record, and Kingston General Hospital's work sheet, 1993.

APPENDIX 2

Equipment for Maternal Transport

BASIC EQUIPMENT

Check that all equipment is available and functioning before leaving the hospital. The equipment and kits should be ready at all times and all staff should know where they are located. Check with local ambulance to determine what equipment is available in the ambulance.

General Equipment

- Maternal transfer form
- Stethoscope
- Thermometer
- Emesis basin
- Flashlight
- Sphygmomanometer
- Doppler (battery operated or fetal stethoscope)
- Infusion pump (battery operated)
- Sterile gloves — three pairs, various sizes
- Peripads
- Sterile lubricant
- Antiseptic solution (e.g. Aqueous Savlon 1:100)

IV Fluids and Maternal Medications

- 1000 cc 5% D/W
- 1000 cc Ringer's Lactate
- Two Solusets
- Tape
- Tourniquet
- Intracaths: two of each #16, #18, #20
- Butterfly 2 of 21
- Assorted needles and syringes
- Alcohol swabs
- Five amps magnesium sulphate one gam/amp
- Two amps Vasodilan 80 mg/mL
- Four amps Syntocinon 10 units/mL
- Four amps calcium gluconate 10 percent in 10 mL
- Two amps hydralazine 20 mg/amp
- Two amps Valium 10 mg/amp
- Indomethocin

Emergency Birth Sterile Kit

- One pair scissors
- Two Kelly's forceps
- Six 4 x 4 gauze squares
- One small drape
- DeLee mucous suction or a mechanical suction (maximum pressure £100) and #10 French catheters
- Two cord clamps
- Two plastic bags (placenta and garbage)
- Blanket for baby
- Aluminum foil sheet

Infant Resuscitation

- Neonatal laryngoscope and small straight blade size 0
- Neonatal self-inflating bag and masks size 0, 1, 2 to administer 100% oxygen
- Clear endotracheal tubes with stylets and connectors size 2:5 to 4
- Epinephrine 1:10,000-1 mL ampoules x three or preloaded syringes
- Naloxone 0.4 mg/mL-1 mL ampoules x three or preloaded syringes
- 1 mL syringes
- 2 mL syringes
- #20 needles
- #25 needles
- Orogastric feeding tubes
- Elastoplast tape and scissors

Adult Resuscitation

- Oxygen — check availability and amount in ambulance
- Ambu bag and mask
- Airway #3

Adapted from: Society of Obstetricians and Gynaecologists of Canada, *Guidelines for Physicians and Nurses in Maternal/Fetal Transport*, Ottawa, 1992.

Family-Centred Maternity and Newborn Care:
National Guidelines

— CHAPTER 10 —

Facilities and Equipment

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Introduction

The actual physical environment of institutions providing services for women and families during the pregnancy, labour, birth, and postpartum periods greatly influences the institution's practices, as well as the experiences of families and staff. Supportive environments enable professionals and families to work together more easily. The planning process for adapting, renovating, or constructing new facilities provides an excellent opportunity to support family-centred care (Hanson et al., 1994).

It must be remembered, however, that the philosophy of care is primarily supported by the people who provide it. If changes to the physical facility are desired, they must be accompanied by efforts to alter the health care providers' behaviour, such that the latter provide support to labouring women based on family-centred maternity care principles (Hodnett, 1998). In addition, adoption of family-centred approaches to providing care should not be delayed until changes occur in the physical facility. The philosophy and attitudes inherent to family-centred care can be embraced in old or new facilities.

Certain principles are critically important to consider when planning and organizing the physical facility. They can be summarized as the need to:

- recognize that birth is a celebration and, in the majority of situations, a normal, healthy process. Women should therefore be supported in a warm, comforting one-room environment, where they can labour, give birth, spend time with their babies and be cared for, together, without the disruption of being moved from place to place, or being separated from their newborn;
- recognize that the central objective of care for women, babies, and families is to assist women to give birth to healthy babies — that is, to maximize the probability of a healthy woman giving birth to a healthy baby. Therefore, appropriate facilities and equipment should be made easily available;
- recognize that caring for women is best done in the context of their families. Therefore, families should be comfortably accommodated in the environment and feel part of the process;
- recognize that when difficulties arise, a critical objective is to help families be together as much as possible; and
- recognize that technology needs to be used appropriately.

Planning for Design or Redesign

To design new spaces or make changes to existing areas that support family-centred programs and activities, thoughtful, collaborative planning is essential. The actual design planning, whether for new institutions or for changes to existing institutions, should emanate from the principles expressed within these organizations' mission and philosophy-of-care statements; these, in turn, should be based on the principles of family-centred care.

Three important principles should be considered in conjunction with the planning process:

- the need for a participatory approach. Build collaboration and partnership with families and involve staff in the planning process.
- the need for increased collaboration between community and institutional providers. Ensure that planning studies involve representation from a wide range of providers and consider opportunities to improve health services through integrated delivery systems.
- the need to plan for change. Build a measure of adaptability into all plans, whether long range or geared to specific facilities. The notion of changing circumstances is one of the few constants of health care.

Such planning will require a multidisciplinary team comprising parents, direct care providers, administrators, facility planners, architects, and interior designers. Support services including housekeeping and dietary are also essential to this team. This multidisciplinary team should collaborate on developing programs, as well as on planning the spaces in which those programs will occur (Hanson et al., 1994). (See Appendix 1.)

Designing or renovating spaces so that they function most successfully for all users offers administrators valuable opportunities to look beyond such basic issues as square footage, volume of usage, and modest improvements to design-oriented problems. Functional space programming offers users and administrators the chance to ask detailed questions about how the space will affect the experiences of families and staff (Hanson et al., 1994). Pertinent questions might include the following:

- Is there adequate affordable parking next to the entrance? Is the walk-in entrance clearly marked?
- How do families find their way to the unit?

- What are the first impressions of families arriving at the hospital and on the unit?
- Does the unit have private areas where families can talk to staff? Talk on the phone? Be together?
- Are there play areas for children or siblings?
- Is there a secure storage area for the family's belongings?
- Are there conference rooms, work areas, and lounges available for staff members?
- Are the surroundings warm and inviting? Is it clear that this is a place for families?

The selection of facility planners, architects, and interior designers is an important decision. Beyond assessing their skills and experience in design, the responsible officials should evaluate the sensitivity of the architects and designers to the needs of families and their way of working with clients (Johnson et al., 1991).

Suggestions for Existing Facilities

For many facilities, constructing a new unit might seem to be the only sure way of creating an environment that facilitates the principles of family-centred care. However, it is possible in facilities with dated physical environments to incorporate changes that support normal birth. And in many cases, this can be done with minimal financial expenditures. The revamping naturally begins by encouraging staff members to be creative when visualizing new possibilities in existing space. Members of the community tend to view space differently and can bring fresh perspectives to changes they feel would improve the environment. For example, it is not necessary to purchase expensive new Jacuzzi tubs; hydrotherapy for pain relief in labour can be achieved by using the existing showers and tubs (these may or may not be located in the labour and birth area, but they do exist in other areas of the department and can be accessed). As well, labour triage assessment areas can be located in other combined-purpose areas. The concept of expanding the boundaries is particularly useful; women can then be encouraged to walk outside the unit and return periodically for assessment. Other items can be purchased for labour and birth areas with minimal expense, including birthing balls; birth stools; rockers; sleeping chairs for partners; and decorative items, such as curtains and paintings, that soften the environment. Among the many other suggestions for making a facility more family-centred, without capital expenditure, are the following:

- "conventional" beds for births (labour rooms can be used for labour, birth, and recovery if no funds are available for special birthing beds);
- pictures on the walls of the unit that evoke a family-centred attitude about values. Representations might include mothers together with babies, dads and babies, families with babies, breastfeeding mothers, or beautiful term and preterm babies. Pictures and stencils at the "sibling" level do a great deal to show that little visitors are welcome;
- individual rooms named for first babies born, special people in the program, special mothers/families, and so on;
- homemade door decorations;
- window treatments or ceiling borders inspired by staff members or a group of mother volunteers;
- alternatives to the usual "nourishments" in the hospital kitchen, such as a fruit basket that could be the ongoing donation of a local grocery store;
- sibling tours, colouring books, stickers, or toy shelves arranged by age group;
- a birthday card for every new baby; and
- parking chit for new fathers/partners and discounts from the hospital cafeteria for parents.

The key to this approach is a willingness to view the space differently; the willingness to make certain relatively simple changes in the way staff members conduct their work; and, of course, the willingness to involve the families of the community.

Antenatal, Birth, and Postpartum Facilities

When renovating or planning new facilities for maternal and newborn services, it is recommended that they be consolidated in one designated area. Ideally, this area would be physically arranged so as to forestall a flow of unrelated traffic through the unit. No other services should be provided in this area, nor should clients from other services be cared for in the maternal and newborn area.

The unit should be designed as a warm environment. It should be inviting to parents and provide optimum privacy and comfort for families.

It should encourage families to be together and to participate in the events of the labour, birth, and postpartum period. It should be functional in terms of providing quality care to mothers and babies. Creating a warm environment can be accomplished through the careful selection of interior colours, furnishings, finishes, and lighting. Incorporating relevant art work, murals, quilt work, and other decorative features is also helpful.

The maternal and newborn service must incorporate a number of different aspects of care in its facilities. Of course, the volume of service and care resources may at times permit the combination of some of these care aspects within a single room. The aspects of care are:

- antenatal in-hospital care for women requiring stabilization or hospitalization before labour;
- a triage area for women who are not yet in active labour, or who need to be observed to determine whether labour has actually begun; and
- labour, birth, and postpartum care of mothers and babies.

It is recommended that hospitals move away from the multitransfer system, whereby women labour in one room, give birth in another room, "recover" in a third, and then are transferred to a postpartum/nursery unit. Not only is this system disruptive for women and families, it can result in a net loss of continuity of care; it also represents a poor use of human, physical, and financial resources, while portraying birth as a medical event, rather than a healthy process.

It is therefore recommended that a woman labour, give birth, and spend at least her first postpartum hours in the same room. This single-room approach is best achieved in a labour/birth/recovery/postpartum (LBRP) system. Hence, it is recommended that all new facilities be built with LBRPs. However, it is recognized that existing facilities may have to continue using labour/birth/recovery (LBR) rooms — that is, single rooms where women labour, give birth, and recover — before being transferred to a combined mother/infant postpartum care unit. Nonetheless, the goal should be *a complete hospital stay in one room*.

It is further recommended that women in active labour, after being evaluated in a triage/preadmission area, should be admitted to a combined LBR or LBRP room. If both mother and baby are healthy, they stay either in the LBRP room following birth and then are discharged home, or are moved from the LBR to a combined mother/baby postpartum unit.

If a cesarean birth is necessary, the woman is transferred to an operative/cesarean birth room for the birth, and then returns to the LBRP/LBR unit. It is recognized that women need a recovery period during which time they are closely monitored. This recovery time should be spent with the baby, and can occur in the operative/cesarean birth room. The operative/cesarean birth room and recovery area should be located within the maternal and newborn care area.

Key Components of the Labour and Birth Unit

TRIAGE/PREADMISSION/EARLY LABOUR LOUNGE

Women should initially be seen and evaluated in the triage/preadmission area. If they are in labour, they can be admitted to an LBRP or LBR room. If their labour is in a very early stage, they can either return home, providing home is close and the trip is feasible (this depends on distance, weather, time of day, and availability of transportation), or remain in the labour lounge. If this preadmission area is excluded from the maternal/newborn suite, women are often admitted to LBR or LBRP rooms for evaluation. Unfortunately, this step can result in increased interventions and poor use of resources (McNiven et al., 1998) (see Chapter 5).

ROOMS FOR LABOUR, BIRTH, RECOVERY, AND POSTPARTUM PERIODS

Single-room, comprehensive maternal and newborn care can be provided to women in labour without any identifiable risk factors, as well as women with identified risk factors. Each room should be equipped for all types of birth, except cesarean births or births requiring general anesthesia. All LBRP rooms should be located close to the operative birth room(s) (see section Operative Birth Room on page 12).

THE LBR OR LBRP ROOM

Both the LBR and LBRP rooms are private, ideally with a private toilet, shower/tub, and a storage area for basic equipment. A window with an outside view is essential in an LBRP room. Each room contains a birthing bed or a regular, comfortable bed that facilitates care during labour and birth. If necessary, the bed should be easily transportable to the room for operative births.

The workable size of an LBR or LBRP room is approximately 5 metres (16 feet) × 5 metres (16 feet) — for a total size of 25 square metres (256 square feet) — excluding the toilet and tub/shower. At the foot of the bed, there should be a minimum of 1.5 metres (5 feet) of clear space. With single occupancy, there should be adequate space in the room to move around freely and allow easy access to the bed. The design of the room should facilitate a health care provider's recording tasks during the labour, birth, and postpartum periods. The design of an LBR or LBRP room should support the privacy of the mother during labour and birth.

It is suggested that the room be outfitted with certain specific items to make it comfortable and functional for the woman and her family. Recommended items include:

- a bassinet;
- a comfortable bed, chair or sofa for support people;
- a glider or rocker;
- a chair for the health care provider;
- a birth mirror;
- a privacy curtain;
- an over-bed table;
- a bedside cabinet;
- a grab bar, and a bench or chair in the shower;
- a laundry hamper (to be brought in when required);
- a locker (closed) space for personal belongings;
- a wall clock with a second hand;
- a tape/CD player and/or radio (for music); and
- a television.

As well, a VCR should be available for educational purposes, either in the room or on the unit. Even though additional fees for television use may be charged to women and their families, it is important that all women have access to the available educational programming. When planning new facilities, or renovating, administrators should consider making bathtubs (preferably whirlpools) available, as well as showers.

Each LBR/LBRP room needs separate oxygen, air, and suction facilities for the mother and baby. Easily accessible gas outlets (this may include nitrous oxide) and wall-mounted equipment are required as well, although they may be covered. There should be both natural and indirect lighting for labour, with an adequate light source available for special treatments. There should be six duplex wall-mounted electrical outlets for the mother's area, and six for the infant's area. An additional outlet is required for a portable x-ray machine. Depending on the building code, other outlets may be required as well. Naturally, there must be an appropriate emergency power source and smoke detectors.

All rooms need a telephone with an outside line, a nursing call system with data outlets, and emergency buzzers in the vicinity of both bed and bathroom.

Appendix 2 lists the equipment recommended for the LBR or LBRP rooms. The document *National Guidelines for Neonatal Resuscitation* (CICH, 1994) outlines the recommended equipment for neonatal resuscitation.

OPERATIVE BIRTH ROOM

The operative birth room is used for cesarean births, for other situations of risk to the mother and/or baby, or when a complication is expected or experienced. In keeping with infection control guidelines, birth/operating rooms should be located in a restricted area in the same locale, or adjacent to, the birth rooms. The operative birth rooms should be at least 37 square metres (400 square feet) in size, with an adjacent scrub area. The room may have a bed with stirrups and retractable base, or a birthing bed. There should be separate wall suction and oxygen for mother and baby. Space for resuscitation and other care of the baby should, conceptually, be a separate part of the operative birth room, or provided in a room immediately adjacent (see next section, Infant Resuscitation Area). Any room functioning as an operative birth room should contain, or have immediately available, all the equipment deemed necessary for the birth area, plus that listed in Appendix 2.

Following an operative birth, it is preferable for the mother and newborn to return to the birth room to recover from anesthesia. The recovery area should be situated and designed to facilitate nursing staff observation of both the woman and baby.

INFANT RESUSCITATION AREA

The purpose of this area is, when needed, to facilitate the resuscitation and stabilization of newborn babies. Resuscitation usually occurs in the birth room, although at times a nearby room may be designated. If resuscitation takes place in the birth room, the area should be large enough to allow for proper resuscitation of the infant without interference in the mother's care. The room temperature should be kept between 22° and 26° C. A radiant warmer with a servo control should be in place.

A resuscitation area should be planned as an area separate from that used for the mother's care, but, if located within a birth room, have at least 3.7 net square metres (40 net square feet) of floor space. A separate resuscitation room should have a floor space of approximately 14 net square metres (150 net square feet). The area should have adequate suction, oxygen, and compressed air outlets to enable resuscitation of twins; and at least six electrical outlets for each baby. A separate resuscitation room should also have an electrical outlet to accommodate a portable x-ray machine.

POSTPARTUM MOTHER/BABY ROOMS

One of the important objectives of postpartum care is to enable mother and baby to be together. As discussed in Chapter 6, in combined mother/baby care, one nurse cares for both the mother and infant. With this type of care, it is expected that the mother and infant will not be separated. The nurse is expected to provide the necessary care and assistance in the mother and baby's room, rather than in a central nursery area.

It is recommended that private rooms be used for postpartum mother/baby care. The arrangement of the square footage should permit adequate circulation around the beds of the mother and baby. These rooms should create an environment in which the mother can effectively begin the process of caring for herself and her baby. Newborn security is best achieved when mothers and babies room together.

It is recommended that there be clearance of at least 1.2 metres (4 feet) between all beds and at least 1 metre (3 feet) between the side of any bed and any adjacent wall (for a minimum of 9 square metres [100 square feet] per bed). If multiple-bed rooms are used, sufficient space is required to enable each bed to be moved in or out of the room without the other furniture being shifted. As well, there must be sufficient space to accommodate a bassinet by the mother's bedside and the necessary supplies to care for the newborn. In a multiple-bed room, privacy screening for each bed is required.

Each mother/baby room should have:

- a comfortable bed for the mother;
- a self-contained bassinet with a capacity for a 24-hour supply of infant needs;
- an over-bed table;
- a bedside cabinet;

- an armchair/rocking chair and a footstool (helpful for promoting proper positioning and breastfeeding comfort);
- a locker for clothing and suitcases;
- an over-bed light;
- an oxygen outlet and vacuum suction;
- a communication system;
- storage space for supplies and laundry;
- a wall clock with a second hand;
- a telephone outlet with an outside line; and
- a television for educational programming.

Each room should have hand-washing facilities. A toilet and shower should be located in, or adjacent to, each room. There should be a refrigerator and freezer for the storage of expressed milk.

NURSERY

It is now expected that because separation of mother and infant will no longer occur and the nurse provides mother/baby care in their room; therefore, not every postnatal unit will need a full-sized nursery. However, a small holding nursery will still be required for those babies who, for various reasons, are unable to remain constantly with their mothers or must remain after their mother's discharge.

A holding nursery should be able to accommodate up to 25 percent of the infants on the unit at any given time. Nurseries usually house a treatment area. The bassinets should be encircled by a 1 metre (3 foot) border of space, measured from the edge of one bassinet to the edge of the neighbouring bassinet. Each bassinet needs an overall floor area of at least 2.8 square metres (30 square feet).

The holding nursery should have the following features:

- a designated work area for examination and minor procedures;
- a charting area; and
- clear glass partitions between the nursery and the nurses' work centre to permit maximum visual surveillance by staff members.

As well, there should be sufficient access to daylight (outdoor windows) or artificial simulated daylight within the nursery to permit observation of the newborn's colour. Moreover, nursery walls should be painted a colour that minimizes any distortion of the newborn's colour (i.e. the walls should not be painted yellow or blue).

Each nursery needs to have the following:

- self-contained bassinets, each with a capacity for a 24-hour supply of infant needs;
- one hand-washing sink, with wrist- or foot-action blades, for every four to six newborns;
- one oxygen outlet for every five to six neonatal stations;
- one suction outlet for every five to six neonatal stations;
- a wall clock with a second hand;
- rocking chairs;
- clean laundry storage;
- a designated space in the utility room for soiled diapers, laundry, and used supplies;
- a designated storage space for the newborn's equipment (either in the nursery or elsewhere in the unit);
- one duplex wall-mounted electrical outlet for every two stations (electrical outlets to power portable x-ray machines are recommended as well); and
- an appropriate emergency power source.

A listing of the equipment necessary for the nursery is found in Appendix 2.

During the first hours after birth, when observation and assessment of the mother and infant are so important, the infants should ideally be with their mothers. However, infants requiring special observation or medical intervention should be provided with a small transition/sick infant nursery, which can be part of the small holding nursery. The capacity required depends on the number of births and the length of stay in the observation area. It is recommended that the transition nursery have at least 3.7 net square metres (40 net square feet) for each baby. This sick infant nursery should be located near or adjacent to the birth room. It should contain emergency resuscitation equipment and piped gases (oxygen and suction).

SUPPORT AREAS

A number of support areas, integral to the functioning of maternal and newborn facilities, are recommended. In many circumstances, they are shared by staff and family members. These areas are described in Appendix 3.

Additional Features in Level II and Level III Facilities

The *Level II* labour and birth areas should have the facilities and equipment described above, as well as the following features:

- equipment and facilities to monitor fetal heart rates electronically (SOGC, 1995); and
- a special care nursery.

Level III labour and birth areas should have the facilities and equipment described for Levels I and II, as well as the following features:

- the capability to function as an intensive care area for the handling of obstetrical and medical complications of pregnancy;
- obstetrical bed(s), to be used for invasive monitoring on the labour floor;
- one operative birth room for a hospital expecting 1000 births per year; and
- neonatal intensive care.

As well, both Level II and III labour and birth areas should have a dedicated, portable ultrasound unit on the labour floor.

When a newborn is admitted to the neonatal intensive care unit (NICU), family members experience enormous stress. Parents of infants born prematurely or sick are thrust precipitately into their new parenting roles and into unfamiliar territory. Parents frequently report feeling extraneous in the high-technology settings, helpless to comfort their infant or to affect the environment. These families have a great need for support, information, and comfort (Johnson et al., 1991). Family-centred policies, programs, and practices that exist elsewhere in the facility must be integrated as part of the critical care setting.

The parents' presence is a crucial factor to both their infant's and their own health and well-being. Not only must staff attitudes and unit policies and practices ensure that families are welcome at all times, but the families must be assigned a comfortable space in the unit as well as a pleasant place to rest and sleep. To evaluate the service provided, a number of questions need to be addressed. They are summarized in Table 10.1.

Table 10.1 Evaluating a Family-Centred Intensive Care or Special Care Nursery

- Are families' first impressions of the unit positive?
- Do the environment and design present this unit as a caring place, a place for children and families?
- Are inappropriate, overwhelming stimuli minimized?
- Are maximum efforts made to control noise?
- Is the lighting comfortable for babies and care providers? Does the lighting encourage normal diurnal rhythms?
- Is there adequate, accessible work space around the baby for staff members to provide care efficiently?
- Is there space around the baby for family members to provide care and nurturing comfortably? Are there comfortable places for parents (e.g. rocking chairs)?
- Is there a separate room giving families private space (for day-to-day interactions, for special situations, for breastfeeding, and for meetings with health professionals)?
- Are families encouraged to make their baby's immediate environment as homelike as possible?
- Are telephones, rest rooms with diaper-changing areas, breastfeeding rooms, water fountains, and food services nearby and easy to find?
- Are there secure places for families to hang coats and store other personal belongings?
- Is there a comfortable space near the unit in which parents can sleep?
- Is there space and support for families to learn and practise new caregiving skills?
- Are there facilities for families to room-in with their babies before discharge? Is there a care-by-parent unit? (Swanson, 1998).
- Are parents informed about their region's resources?

Adapted from: Johnson et al., *Caring for Children and Families: Guidelines for Hospitals*. 1991, p. 416.

The NICU environment, and the approach to caregiving, should follow principles that encourage *developmentally supportive care*. This multifaceted approach to care has been designed to create and maintain a developmentally supportive environment; provide age-appropriate sensory input; and protect the infant from inappropriate, excessive, and stressful stimulation. Based on the synactive theory of development, it recognizes that infants communicate their needs through behaviour and that each infant's needs must be assessed individually (Als, 1982; Als et al., 1986, 1994).

Individualized care protocols that fall under the rubic "developmentally supportive" include:

- structuring the physical environment to reduce light and noise levels;
- clustering and sequencing caregiving interventions;
- positioning and bundling of infants;
- involving parents and siblings in care;
- assuring multidisciplinary consistency; and
- providing individualized infant and family care (PEPEO, 1996).

The overall goal of developmentally supportive care is to optimize the development of premature infants and their long-term well-being and adaptation to the extrauterine environment.

The 10th Canadian Ross Conference in Paediatrics, Optimizing the Neonatal Intensive Care Environment (CPS, 1995), made a number of recommendations, based on the available scientific information, to facilitate the provision of developmentally supportive care in the NICU. Tables 10.2, 10.3, and 10.4 present its recommendations with regard to environmental light, environmental sound, and infant-sensitive developmental care.

Table 10.2 Guidelines for Environmental Light in Neonatal Intensive Care Units

- Ambient light levels should be monitored in NICUs to ensure compliance with currently recommended workplace standards.
- Minimum light levels that permit NICU staff members to carry out their work safely and effectively should be established.
- Light levels at the infant's face (i.e. in the incubator, the overhead warmer, or the crib) should be measured.
- Ambient non-therapeutic blue wave-length light (<500 nm) should be minimized in the NICU environment.
- Ambient light levels in the NICU should allow for the experience of infant day-night cycling, especially as the time for discharge home approaches.
- Individualized light sources should be used for each infant in the NICU.

Adapted from: Canadian Paediatric Society, *Optimizing the Neonatal Intensive Care Environment. Report on the Tenth Canadian Ross Conference in Paediatrics*, GCI Communications, Ed., Montréal, Abbott Laboratories, 1995.

Table 10.3 Guidelines for Environmental Sound in Neonatal Intensive Care Units

- Each NICU should monitor its sound levels annually, for at least a 24-hour period, and more often if changes emerge in noise levels or nursery design.
- As reductions in environmental sound levels are unlikely to have deleterious effects, NICUs should examine measures to reduce sound levels, including modification of physical facilities and equipment, staff scheduling, and activities. The noise level in the NICU environment should always be less than 65 to 79 decibels.
- Noise levels in NICUs should always be less than those inherent to occupational health standards for adults.
- When usual noise levels are exceeded (e.g. in helicopter transport), safe and effective ways to shield infants' ears should be employed.
- Although environmental noise levels should be moderated, potentially beneficial sounds, such as the voice of a parent, should not be discouraged.

Adapted from: Canadian Paediatric Society, *Optimizing the Neonatal Intensive Care Environment. Report on the Tenth Canadian Ross Conference in Paediatrics*, GCI Communications, Ed., Montréal, Abbott Laboratories, 1995.

Table 10.4 Guidelines for Infant-Sensitive Developmental Care

- The concepts of "infant-sensitive family-centred care" take into account the infant's:
  - clinical status
  - behaviour
  - temperament
  - environment
  - development
  - family
  - attention to positive and negative stimuli (including hazards and paint).
- Caregiver compatibility and consistency of caregiver are also considered.
- The above concepts should be introduced into all staff training programs.
- Improved communication between families and caregivers should be encouraged.
- Systems should be set up to promote consistency and continuity of care by reducing the number of caregivers.
- Systems should be set up to encourage assessment of the infant's behaviour, in order to develop individualized care plans, reduce stress responses (in the infant as well as the parents), and promote optimal development.
- Cooperation should be encouraged between caregivers, researchers, and industry to promote infant-friendly equipment.

Adapted from: Canadian Paediatric Society, *Optimizing the Neonatal Intensive Care Environment. Report on the Tenth Canadian Ross Conference in Paediatrics*, GCI Communications, Ed., Montréal, Abbott Laboratories, 1995.

In many situations, mothers are discharged from the hospital before their newborns and must travel long distances to be with them. Systems must be developed to meet the needs of parents and their newborns under these circumstances. For example, parents may need rooms in the hospital, in adjacent facilities outside the hospital provided by the hospital, or in other lodgings nearby; as well, the baby may have to be transferred to a facility close to home as soon as possible (CPS, 1995).

Important family space needs to be incorporated into the NICU. A quiet room, or transition room, where parents and infants can have extended private time together is very important. Comfortable furniture; direct, private access to sink and toilet facilities; a telephone with linkages to the staff; sufficient electrical and gas outlets — all are necessary. It is also important to have a room in which to breastfeed and use a breast pump.

Care-by-parent units are desirable to facilitate the parents' caring for their baby before discharge. The goal of such a unit is to encourage parents to take over the care of their infant at the earliest possible stage, thereby building their own confidence and competence. Parents should be given a role in all planning and decision making concerning their babies' care. Moreover, facilities must be made available should they choose to stay around the clock. Criteria for acceptance in the care-by-parent unit, based on the baby's health and well-being, need development as well (Swanson, 1998).

Space and Equipment Requirements for Levels II and III Nurseries

Level II nurseries, which should be close to the birth area and away from general hospital traffic, need the nursery facilities and equipment described in the earlier section, Nursery. They should also have sufficient radiant heaters and/or incubators for maintaining body temperature, as well as infusion pumps, cardiopulmonary monitors, and equipment for ventilatory assistance.

Infants needing intermediate care require an estimated 8 square metres (86 square feet) of floor space for every infant station, with 1.2 metres (4 feet) of space between incubators, bassinets, or radiant heaters and aisles that measure 1.5 metres (5 feet) wide. Each infant station also needs eight electrical outlets, two oxygen outlets, as well as two air and two suction outlets. In addition, the area needs a special outlet to power portable x-ray machines. All electrical outlets should be connected to both regular and auxiliary power. All equipment and supplies for resuscitation should be immediately available, perhaps conveniently placed on an emergency cart. The equipment requirements for babies requiring Level II care are found in Appendix 2. There should be sufficient space to allow for charting at the bedside.

In Level III facilities, the neonatal intensive care area should be adjacent to the labour and birth unit in those hospitals with labour and birth facilities. The care area should have the facilities and equipment designated for Level II. As well, there should be 1.8 metres (6 feet) between incubators or overhead warmers, and aisle widths of 2.4 metres (8 feet). Each neonate requires a total area of 12 square metres (130 square feet). Each station requires 12 to 16 electrical outlets, 2 to 4 oxygen outlets, 2 to 4 suction outlets, and 2 to 4 compressed air outlets. All Level II and III nurseries should have a detailed plan in the event of emergency evacuation, specifying equipment and personnel requirements. The equipment requirements for babies requiring Level III care are found in Appendix 2.

Bed Needs for Labour and Birth Facilities

Historically, the calculation of the number of rooms needed for all phases of the birth process involved a simple ratio based on number of births, average length of stay, and accepted occupancy level. However, today, each birth service should thoroughly analyse the functions, philosophies, and projections that will dictate the type and quantity of rooms needed.

One planning method involves careful analysis of the activities occurring in each type of room. For example, LBR and LBRP rooms should not routinely be used to accommodate care such as outpatient testing, when another room can provide a more appropriate setting. Private rooms are recommended for the entire birth process through discharge.

When planning the number of LBR and/or LBRP rooms, an analysis of the present patterns of care should be reviewed. Analysis would take into account the projected birth rate; the projected cesarean birth rate; occupancy projections that address "peaks and valleys" in the census; the numbers and types of births with complications; the surrounding facilities for transfer; and the expected length of stay for women during the labour, birth, and postpartum periods. Questions to be discussed would include the following:

- How many annual births can be maximally accommodated?
- How long do women using the antepartum, intrapartum, postpartum, and ambulatory services stay?

- What are the current and projected rates for scheduled and unscheduled cesarean births?
- What are the acceptable occupancy rates for the various levels of rooms?
- What levels of peak occupancy are expected and what is their frequency?
- What regional partnerships are in place to replace care unavailable in one specific facility? How many women and infants will be transferred for care? How many women and infants will be admitted from other facilities?

Once the data have been accumulated, the following normative formula can be used to calculate the number of rooms needed by type of room:

$$\frac{\begin{array}{c}\text{Number of client episodes}\\ \text{(consider all activities in this room)} \times \text{overall length of stay}\end{array}}{365 \text{ days} \times \text{percentage occupancy for this room type}}$$

Note: The number of client episodes (cases or activities) is used rather than the number of births.

Environmental Controls and Engineering

Established guidelines exist for regulating acceptable levels of air change, lighting, and noise from other rooms. Guidelines need to be carefully applied to make the environment more family-centred. The woman should be able to control the environment of the birth area — the temperature, and the levels of lighting and sound.

A number of codes and standards apply to maternal and newborn facilities. Reference should be made to the National Building Code; the applicable provincial building codes; and the standards of the Canadian Standards Association (CSA).

Thermal Environment, Ventilation, and Air Conditioning

Hospital engineers should monitor all environmental conditions. The optimal temperature suggested for birth facilities ranges between 22° and 26° C. Relative humidity needs to be maintained between 30 and 60 percent. To cope with the anesthetic gases in use, birth rooms have traditionally required the same number of air changes per hour as surgical suites (16 to 20), if nitrous oxide is used.

Many factors, however, impinge on the recommended guidelines and need to be taken into account. These factors need to be discussed with the consulting mechanical engineers — the ultimate goal being the comfort of the mother and baby. For example, whereas during the birth process higher lighting levels and increased numbers of people raise the heat load in the room, after birth the activities and hence the heat loads slow down.

Electrical Service

The CSA standards provide guidelines for both the supply and format of the power. Emergency power is needed for the essential equipment required by babies in Level II and III nurseries and in birth and operative birth rooms. A debate centres on the necessity of isolated power: although generally not required in birth rooms, isolated power is needed in the NICU and operative birth rooms when invasive procedures are carried out that include electrical equipment. Local building and electrical codes can be used to determine emergency lighting requirements.

Communications

In today's hospitals, as in the wider world, the demands of the communications system are ever-growing. Data lines are necessary to accommodate electronic networks. Intercoms may be part of the telephone system or operate as an independent entity. Emergency call systems should be incorporated into the development of communications systems. Telephones, routinely used by staff and family members, are particularly needed during emergencies.

Acoustics

Control of noise is important in birth facilities. The following guidelines should be applied to decrease noise:

- Install sound attenuation blankets in all partitions.
- Outfit all partitions to underside of deck.
- Outfit solid core doors with rubber gaskets.
- Install fans or sound systems within birth room to mask other sounds.
- Use sound-absorbent materials and/or surfaces designed to break up sound reflections, wherever possible.
- Outfit mechanical equipment with vibration isolation/absorption.
- Consider installing piped-in music.

Selection of Appropriate Materials and Finishes

The choice of appropriate materials and finishes can cut long-term costs. The following questions should be considered during the selection process:

- What cleaning processes and equipment are presently in use?
- What is the cost per square foot of installation and operational cleaning? For example, is there staff available to spot clean carpets or fabric upholstery?
- What is the durability and lifespan of the materials? Can the materials stand up to the high frequency of the cleaning required in birth rooms? Will the materials retain their visual appearance after the frequent cleaning?
- Are the materials resistant to the cleaning products and processes used?
- Are the materials resistant to the staining from chemicals used in the birth process?
- Will the combination of materials chosen create an appropriate atmosphere, conducive to the birth process, yet still be esthetically appealing?

Specific criteria related to the selection of flooring, wall, and ceiling material are found in Appendix 4.

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APPENDIX 1

The Planning Process

TERMINOLOGY AND PLANNING PROCESSES

The following general definitions for several key components of the planning process indicate how they relate to maternal and newborn care. These definitions may vary by province or territory.

Role study: Defines the role of the organization and, in broad terms, the range of services to be provided. The role of maternal/newborn care services is typically identified in this stage or when a regional plan (i.e. Level I, II or III) is developed. It should include the number of beds, bassinets, and staff members by specialty.

Strategic plan: Has generally replaced the role study, although it has similar components. It defines the organization's mission, vision, strategic directions, and goals.

Master program: Provides an assessment, for each hospital department, of the implications of the hospital's future directions apropos the departmental scope of service, workload/activity, and facility requirements in terms of major room elements and departmental square footage.

The ability of the organization to accommodate facility changes to support family-centred care is explored during the master program stage. In this stage, the current and future scope of services is identified and, depending on provincial/territorial requirements, the resources (e.g. staffing) and facility requirements are also identified.

Master plan: Describes and graphically illustrates the implications of the master program for facilities development and provides a strategy for the continued use and the redevelopment or expansion of the buildings.

In the master or conceptual plan stage, the future location, general configuration, and accessibility of projected maternal and newborn care services are described as a component of the building. At this broader stage, it is essential to consider maternal and newborn care within the context of other hospital services and building constraints.

Functional program: Describes in detail a proposed health care activity, outlines its operational systems, and estimates the resources (e.g. staffing, facilities) required for a single functional element or an entire facility. This stage, as an essential prelude to a capital project, serves as a link between operational planning and implementation.

Once a capital project is approved, a functional program for maternal and newborn care services is developed. The functional program details the proposed functions, operational procedures, activity, staffing, design considerations and room elements, the size of each room or space, and the gross area for each department or functional area. The functional program is the basis for architectural/building and other subsequent planning; it is also a means of communicating intentions within the hospital and to outside bodies. In several provinces, the architectural or space program is prepared separately.

ARCHITECTURAL OR DESIGN PROCESS

Once all of the above components are in place, the architectural or design process begins. The design process has six major components: predesign; conceptual design; design development; working drawings; tender; and construction. The six must be done in order and all depend upon the previous components being completed.

During the *predesign stage,* the functional program is confirmed and the existing facilities are reviewed. All key players are involved, including staff and families. Next, the budget is outlined, the project team is organized, and the members' individual responsibilities are detailed. Finally, the project schedule is drawn up.

The *conceptual design stage* involves the development of a schematic design report for the unit. This report includes preliminary concepts for space, mechanical, and electrical systems; cost estimates; and preliminary specifications of construction materials. Alternative schemes should be developed and considered. Staffing requirements related to sketch plans must be created and reviewed and operational budgets developed.

The objective of *design development* is to develop a detailed design of all elements (functions, rooms) of the unit. The detailed design takes into account the occupants, layout, function, privacy, accessibility, permanent furniture and equipment needs, materials and finishes, storage needs, safety, lighting, medical gases, and the power and emergency power requirements. All elements, for each function, should be discussed with user groups.

The final *working drawings* and specifications define the project to a level of detail such that it can be competitively tendered and constructed. Completeness and accuracy of the documentation reduce confusion and ensure that what was desired is built. They also lower unforeseen costs.

The hospital and architect then *tender* the project to approved bidders and select the *construction* team.

Adapted from: Agnew Peckham Health Care Consultants and Parkin Architects.

APPENDIX 2

Equipment Required for Different Facilities

Equipment Needed for Labour, Birth, Recovery, and Postpartum Room

Some of this equipment can be stored outside the room, and brought in when needed.

- Hand-held ultrasound monitor (e.g. Doptone, underwater Dopplers)
- Thermometer
- Sphygmomanometer
- Stethoscope and fetoscope
- Examination gloves, lubricants
- Intravenous equipment
- A drug cart for anesthetics, epidurals, and emergency use
- A cart containing
  - sterile basins and instruments
  - instrument tray (instruments for normal vaginal birth, repair of lacerations, and/or episiotomy; instruments for the management of obstetrical emergencies)
  - linen, gowns, etc.
- Antiseptic scrub solution
- Oxygen equipment (nasal cannula, masks)
- Peripads and underpads
- Catheterization tray
- Equipment for speculum exam
- A radiant warmer for the newborn
- Instrument and worktables
- Mayo stand
- Basin stands
- An accessible examination light
- A stool for the attendant
- Access to a scale for weighing babies
- Transport incubator and equipment
- Equipment for instrumental birth

Equipment Needed for Operative Birth Room

(in addition to that required for birth room)

- Obstetrical forceps
- A vacuum extractor
- Local anesthetic sets
- Drugs — analgesics, oxytocics
- Equipment for anesthetics management (refer to Canadian Anaesthetists Society, anaesthetics guidelines)
- Equipment available to perform a D. and C.

Equipment Needed for Normal Newborn Nurseries

- Equipment for emergency resuscitation of the newborn (see CICH, 1994)
- An incubator
- Infant drugs (as per National Resuscitation Program guidelines)
- Volume expander (as per National Resuscitation Program guidelines)
- A pediatric stethoscope
- Infant scales
- An examining lamp
- A radiant warmer
- Pulse oximeter
- Oxygen analyzer

APPENDIX 3

Support Areas Needed for Antepartum, Labour, Birth, and Postpartum Facilities

The following support areas are required for antepartum, labour, birth, and postpartum facilities:

- Room for family use, private areas for breastfeeding
- Administration office
- Nurses' station
- Charting area
- Conference room
- Education area for staff and family members, with easy access to resource materials
- Staff lounge, locker rooms, and on-call sleep rooms
- Examination and treatment room(s)
- Secure area for storage of medications
- Instrument clean-up area
- Area and equipment for bedpan cleansing
- Central whirlpool bath/shower (if not in each room)
- Kitchen for families and staff
- Storage area
- Utility room for clean and soiled clothing and bedding
- Scrub area
- Library for families and staff

Equipment Needed for Babies Requiring Level II/III Care

At Each Bedside

- Incubator, radiant warmer, cot, crib[1]
- Stethoscope
- Cardiorespiratory monitor (± invasive blood pressure)
- Suction equipment, including catheters
- Bag and mask for ventilation
- Storage cupboard/cart/drawer for supplies (e.g. glucose indicator strips) and personal use items, including items provided by parents

On Each Unit[1]

- Phototherapy units
- Portable warming lamp
- Procedure lights (unless at each bedside)
- Ventilators, oxygen blenders

- Oxygen analyzers, pulse oximeters, transcutaneous PO_2
- Transcutaneous/end tidal CO_2 monitors
- Portable O_2 for emergency evacuation
- Transport incubators (and equipment)
- Intravenous pumps
- Ophthalmoscope, otoscope, transilluminating light
- Infant scales, scales for weighing diapers
- Electric breastpumps, freezer for milk
- Refrigerator for medications
- Resuscitation cart
- Equipment for individual hand-bagging (in the event of gas pressure failure or emergency evacuation)
- Procedure trays and equipment (e.g. for intravascular access, chest tubes)
- Manuals and educational material for parents and staff
- Blood gas analyzer (on unit or close, for 5-minute results)
- Storage carts, procedure tables, as required

In addition, spare equipment should be readily available.

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[1] Specific numbers to depend on population mix

APPENDIX 4

Criteria for Selection of Materials

Table A4.1 Criteria for Selecting Flooring and Base Materials

- Water resistance and absorption factors
- Slip-resistance and safety factors
- Comfort for staff who stand for long periods of time
- Comfort for patients — warmth
- Cleanliness and appearance of cleanliness (stains convey an inappropriate image)
- Visual appeal
- Durability
- Resistance to damage and marking by equipment and carts

Table A4.2 Criteria for Selecting Wall Material

- Colour — ability of staff to assess patient's skin colour (especially newborn)
- Cleanability, see comments in Table 1
- Visual appeal/esthetics
- Cost
- Resistance to damage by carts and equipment (consider wall rails and bumpers)
- Reflectance of light — glossy finishes can create glare that is harmful to newborn eyes; very matte finishes in dark colours will absorb too much light and increase the need for artificial light sources
- Pattern vs. solid colours

Table A4.3 Criteria for Selecting Ceiling Material

- Sound absorption
- Odour absorption/cleanability
- Integration of lighting and mechanical equipment into ceiling grid
- Cost
- Colour/light reflectance
- Visual appeal
- Ease of access for repairs to equipment in the ceiling space

Companion Documents

There are a number of other important documents that are complementary to these guidelines, and it is recommended that agencies have them readily available within their facility.

AVAILABLE FROM THE CANADIAN MEDICAL ASSOCIATION

- *The Cochrane Library*
  Database of Systematic Reviews: Pregnancy and Childbirth Group; Neonatal Group
  Electronic database providing reliable evidence about the effects of health care interventions. Annual subscriptions available on 3½ inch disk for Windows or CD-ROM.
- *CMA CPG Infobase*
  The CPG Infobase offers access to more than 300 clinical practice guidelines online.

Canadian Medical Association
1867 Alta Vista Drive
Ottawa, Ontario
K1G 3Y6
Tel.: (613) 731-9331
Fax: (613) 236-8864
http://www.cma.ca/cpgs/

AVAILABLE FROM THE SOCIETY OF OBSTETRICIANS AND GYNAECOLOGISTS OF CANADA

- *Healthy Beginnings: Guidelines for Care During Pregnancy and Childbirth*
  Society of Obstetricians and Gynaecologists of Canada, 1998
- *Healthy Beginnings — Your Handbook for Pregnancy and Birth*
  Society of Obstetricians and Gynaecologists of Canada, 1998
- Guidelines, Policy Statements and Committee Opinions of the Society of Obstetricians and Gynaecologists of Canada

Society of Obstetricians and Gynaecologists of Canada
774 Echo Drive
Ottawa, Ontario
K1S 5N8
Tel.: (613) 730-4192
Toll-free: 1-800-561-2416
Fax: (613) 730-4314
http://www.sogc.medical.org

AVAILABLE FROM THE CANADIAN PAEDIATRIC SOCIETY

- Canadian Paediatric Society Position Papers
- Red Book: Report of the Committee on Infectious Diseases American Academy of Pediatrics

Canadian Paediatric Society
2204 Walkley Road, Suite 100
Ottawa, Ontario
K1G 4G8
Tel.: (613) 526-9397
Fax: (613) 526-3332
http://www.cps.ca

AVAILABLE FROM THE BREASTFEEDING COMMITTEE FOR CANADA

- *Breastfeeding Statement*

The Breastfeeding Committee for Canada
P.O. Box 65114
Toronto, Ontario
M4K 3Z2
Fax: (416) 465-8265
E-mail: bfc@istar.ca
http://www.geocities.com/HotSprings/Falls/1136

AVAILABLE FROM THE CANADIAN INSTITUTE OF CHILD HEALTH

- *National Breastfeeding Guidelines for Health Care Providers*
  Canadian Institute of Child Health, 1996
- *Neonatal Resuscitation Guidelines*
  Canadian Institute of Child Health, 1994

Canadian Institute of Child Health
384 Bank Street, Suite 300
Ottawa, Ontario
K2P 1Y4
Tel.: (613) 230-8838
Fax: (613) 230-6654
http://www.cich.ca

AVAILABLE FROM HEALTH CANADA

- *Nutrition for a Healthy Pregnancy: National Guidelines for the Childbearing Years*
  Minister of Public Works and Government Services Canada, 1999
- *Back to Sleep* brochure
  Ottawa, Health Canada, The Canadian Foundation for the Study of Infant Deaths, Canadian Institute of Child Health, Canadian Paediatric Society
  Minister of Public Works and Government Services Canada, 1999
- *Back to Sleep* poster
  Ottawa, Health Canada, The Canadian Foundation for the Study of Infant Deaths, Canadian Institute of Child Health, Canadian Paediatric Society
  Minister of Public Works and Government Services Canada, 1999
- *Joint Statement: Reducing the Risk of Sudden Infant Death Syndrome in Canada*
  Health Canada, The Canadian Foundation for the Study of Infant Deaths, Canadian Institute of Child Health, Canadian Paediatric Society
  Minister of Public Works and Government Services Canada, 1999
- *10 Great Reasons to Breastfeed*
  Minister of Public Works and Government Services Canada, 1998

- *10 Valuable Tips for Successful Breastfeeding*
  Minister of Public Works and Government Services Canada, 1998
- *Nutrition for Healthy Term Infants*
  Statement of the Joint Working Group: Canadian Paediatric Society, Dietitians of Canada and Health Canada
  Minister of Public Works and Government Services Canada, 1998
- *Breastfeeding in Canada: A Review and Update*
  Minister of Public Works and Government Services Canada, 1998
- *Multicultural Perspective of Breastfeeding in Canada*
  Minister of Public Works and Government Services Canada, 1997
- *Breastfeeding: A Selected Bibliography and Resource Guide*
  Minister of Public Works and Government Services Canada, 1997
- *Joint Statement: Prevention of Fetal Alcohol Syndrome (FAS), Fetal Alcohol Effects (FAE) in Canada*
  Minister of Public Works and Government Services Canada, 1996
- Breastfeeding Media Kit
  Ottawa: Health Canada, 1994-1998

Publications, Health Canada
Ottawa, Ontario
K1A 0K9
Tel.: (613) 954-5995
Fax: (613) 941-5366
http://www.hc-sc.gc.ca

AVAILABLE FROM CANADIAN GOVERNMENT PUBLISHING

- *Postpartum Parent Support Program: Implementation Handbook*
  Minister of Supply and Services, 1989
- *Postpartum Parent Support Program: Reference Manual*
  Minister of Supply and Services, 1993
- *Postpartum Parent Support Program: Parent Questionnaire and Information Sheets*
  Minister of Supply and Services, 1995

Canadian Government Publishing
Public Works and Government Services Canada
Ottawa, Ontario
K1A 0S9
Tel.: (819) 956-4800 or 1-800-635-7943
Fax: (819) 994-1498 or 1-800-565-7757
E-mail: publications@pwgsc.gc.ca
http://publications.pwgsc.gc.ca

AVAILABLE FROM THE CANADIAN FOUNDATION FOR THE STUDY OF INFANT DEATHS

- *Sudden Infant Death Syndrome Sleeping Position Information for Health Professionals, 2000*

The Canadian Foundation for the Study of Infant Deaths
586 Eglinton Avenue East, Suite 308
Toronto, Ontario
M4P 1P2
Tel.: 1-800-END-SIDS (363-7437)
www.sidscanada.org/sids.html

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